BLM

ENVIRONMENTAL ASSESSMENT

City of Elko
Water Reclamation Facility
Reuse Site

December 2009

Recreation & Public Purposes Act Case File Number: N-85701
BLM-NV-020-2009-001-EA

Elko District Nevada

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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1 INTRODUCTION

The Bureau of Land Management (BLM) Tuscarora Field Office is considering approval of a Recreation and Public Purposes (R&PP) Act application (N-85701) submitted by the City of Elko (City) for the expansion of the existing Reuse Site located to the south and west of the Water Reclamation Facility (WRF). The existing Reuse Site lacks the capacity to properly infiltrate the treated effluent currently generated by the City. Furthermore, the City's population continues to increase (U.S. Census Bureau, 2007), so the generated effluent is anticipated to increase in the future. The proposed expansion to the Reuse Site would be located within Elko County, Nevada. Figure 1 presents the Project location. The Reuse Site expansion developments would be located on both private land owned by the City and on public land administered by the BLM.

Land can be transferred from the BLM to non-profit or governmental entities under the R&PP Act of June 24, 1926, as amended (43 United States Code (USC) 869 et seq.). Federal guidelines and procedures for transfer of certain public lands to states or their political subdivisions and to non-profit corporations and associations for recreational and public purposes under the act as amended are provided in 43 Code of Federal Regulations (CFR) 2740.

Five parcels are proposed for acquisition and development of expanded facilities by the City. They consist of approximately 808 acres of public land administered by the BLM in Township 34 North, Range 55 East, Mount Diablo Meridian as shown on Figure 2.

The Project Area consists of approximately 808 acres of public land administered by the BLM and approximately 801 acres of private land owned by the City. The Project Area is shown in Figure 2. The legal description of the land considered for acquisition is included in Appendix A.

The City would construct up to 15 rapid infiltration basins (RIBs) to receive treated effluent which would then infiltrate into the ground. The RIBs would be seasonally dried during the summer months for scarification and maintenance. The City would also construct two lined effluent storage reservoirs; this treated effluent would be used for irrigation at nearby hay fields within the Bruce Miller Ranch or other permitted irrigation users between April 15 and October 15 of each year.

The City would also construct a new access road, maintenance roads, groundwater monitoring wells, a fecal coliform monitoring station, and pipelines. Water would be piped from the existing distribution system to the new RIBs and effluent storage reservoirs through buried pipelines which would be located within the Project Area. Treated effluent from the new and existing reservoirs would be pumped through buried pipelines to the existing pump station and throughout the existing reuse system. Portions of the land may also be used by the City for public recreation purposes in the future, i.e. sports fields.

This environmental assessment (EA) was prepared for compliance with the National Environmental Policy Act (NEPA) of 1969 and in accordance with applicable regulations and policies, including the President's Council on Environmental Quality regulations, U.S. Department of Interior requirements, and direction from the BLM NEPA Handbook H-1790-1 (BLM, 2008). This EA was developed to assess the potential environmental impacts of the proposed action and reasonable alternatives, and to document public participation in the planning and decision-making process.

1.1 PURPOSE AND NEED

The purpose of the proposed action is to allow the City to acquire the land necessary to expand the existing Reuse Site and to develop the associated components necessary to better manage and monitor treated effluent at the Reuse Site.

The need for the action is due to a foreseeable increase in the City's effluent production, related to current growth trends in both City population and the per capita effluent production. An increased effluent production results in a need for an increase in capacity for treated effluent at the Reuse Site and additional management and monitoring options.

1.2 RELATIONSHIP TO LAWS, POLICIES, AND LAND USE PLANS

The proposed action described below is consistent with federal, state, and local laws, regulations and plans to the maximum extent possible.

1.2.1 Federal Land Use Plan Conformance

The proposed action conforms to the Elko Resource Management Plan (RMP), as it was approved March 11, 1987 (BLM, 1987). As noted on page 9 of the approved plan, BLM has an objective to allow disposals, land tenure adjustments, and land use authorizations, with a management action to:

> Make available, primarily through sale, up to 5,900 acres of public land to meet community expansion needs.

The lands for consideration under the R&PP Act application lie within the area designated by the Elko RMP, Map 3, for community expansion land sales. The proposed development plan for the expansion of the Reuse Site, as it is described and analyzed in this EA to include measures to protect and conserve natural and cultural resources and uses, is further consistent with the standard operating procedures listed on page 10 of the Elko RMP.

1.2.2 Federal Laws and Regulations

The City's request is in accordance with the R&PP Act as amended (43 USC 869 et seq.). The R&PP Act, under 43 CFR 2740.0-3, authorizes the Secretary of the Interior to convey, to states or their political subdivisions, public lands for recreational and public purposes under specified conditions.

The R&PP Act disposal is also consistent with regulations at 43 CFR 2710.0-3 which states that the Department of the Interior is authorized to sell lands if the sale of the tract meets any of the listed criteria. Two of the criteria met by the lands being considered by the proposed action are:

- Disposal of such tract shall serve important public objectives, including but not limited to, expansion of the communities and economic development, which cannot be achieved prudently or feasibly on lands other than public lands and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership (43 CFR 2710.0-3(2)); and

- Such tract, because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands and is not suitable for management by another Federal department or agency (43 CFR 2710.0-3(3)).

This proposed action is also in conformance with requirements of Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulation 36 CFR 800 regarding the effects of the proposed undertaking on historic properties and possible protection, mitigation or avoidance as required.

A list of the federal statutes reviewed during the preparation of this EA is included in Appendix B.

1.2.3 State and Local Government Plans and Policies

In accordance with 43 CFR 1610.8 (a)(3), the proposed action as described in this EA is consistent with state and local laws, regulations, and plans to the maximum extent possible. This includes:

- Article II§2.130 (1)(c) of the Elko City Charter: The city council may: Purchase, receive, hold, sell, lease, convey and dispose of property, wherever situated, for the benefit of the city, improve and protect such property, and do all other things in relation thereto which natural persons might do (City of Elko, 1971); and
- Objectives of the population component of the City of Elko's Master Plan: To ensure that population growth does not exceed the ability of the City to provide basic essential services including sewer, water, transportation and parks and recreation facilities (City of Elko, Master Plan).

In addition to obtaining BLM approval of the R&PP Act application, the City would obtain the necessary permits required to develop the proposed facility. This includes modification of the existing groundwater permit, surface area disturbance, and dam safety permits from the state of Nevada.

1.3 ISSUES

As a result of scoping, the following issues are addressed in this EA:

- Alternatives to the acreage proposed for acquisition;
- Possible effects of the proposed action on cultural resources and Native American concerns;
- Effects of the proposed action on the ground and surface water quality;
- Potential presence of minority or low income populations and the potential for effects of the proposed action on those populations (environmental justice);
- Presence of flood plains within the Project Area and the potential effects;
- Effects of the associated disturbances of the proposed action on soils;
- Effects of the associated disturbances of the proposed action on vegetation including wetlands and riparian areas and non-native and invasive species;

- Effects of the proposed action on wildlife and migratory birds, including special status species;
- Potential creation and handling of wastes under the proposed action;
- Effects of the proposed action on existing and potential land use in the area, including access, rights-of way, mineral resources, and grazing;
- Effects of the proposed action on wildfire potential and suppression;
- Effects of the proposed action on local and regional socioeconomics;
- Effects of the proposed action on visual resources; and
- The cumulative impacts of the proposed action on affected resources and uses, in combination with other past, present, and reasonably foreseeable actions.

2 ALTERNATIVES

The following sections describe the City's application and site development plant, environmental protection measures, and standard operating procedures that would be used (Proposed Action). The description of the Proposed Action alternative is followed by a description of the No Action alternative. Under the No Action alternative, the R&PP Act application would not be approved, and the City would not expand their existing Reuse Site onto the parcels proposed for acquisition.

The Project Proponent's address is:

City of Elko
1751 College Avenue
Elko, Nevada 89801

The Project Area encompasses approximately 808 acres of public land administered by the BLM and approximately 801 acres of private land owned by the City located approximately three miles southwest of Elko in Elko County, Nevada.

Table 1 shows the township, range, and sections within the Mount Diablo Base and Meridian for the Project Area, including the existing Reuse Site and the five parcels of public land proposed for acquisition (see Table 1 and Appendix A). Figure 1 presents the general project location, and Figure 2 presents the Project Area including land status and parcel identifications.

Table 1: Project Area Location Description

Parcel	Land Status	Township and Range	Sections	Area (acres)	Total Areas (acres)
Parcels A and E	Public	T34N, R55E	29	377.8	
Parcel B	Public	T34N, R55E	32	150.0	
Parcel C	Public	T33N, R55E	5	148.3	
Parcel D	Public	T33N, R55E	6	131.4	
Total - Proposed Area					**807.5**
Existing Reuse Site	City	T34N, R55E	32	552.1	
		T34N, R55E	33	61.7	
		T33N, R55E	6	186.8	
Total - Existing Area					**800.6**
Total - Project Area					**1,608.1**

The objective of the City's WRF is to treat wastewater so that it meets the provisions of the City's effluent discharge permit granted by the Nevada Division of Environmental Protection (NDEP) Bureau of Water Pollution Control (BWPC) NEV20014. The WRF treats domestic and commercial wastewater from a service area of approximately six square miles, primarily within the Elko City limits as shown in Figure 3. The WRF is designed to reduce or remove organic material, water-born disease organisms, and nuisance agents such as odors from the raw sewage, through the use of physical, biological, and chemical treatment methods.

The WRF treated effluent is currently permitted for reuse at various locations and for disposal in RIBs located at the existing Reuse Site. The treated effluent is pumped to the Reuse Site where it is distributed among the RIBs and/or placed into one of the two effluent storage reservoirs (Figures 2 and 3).

2.1 EXISTING DEVELOPMENT

The existing Reuse Site consists of eight RIBs, one distribution pond, the 5C Pumpback Pond and a small pond located up gradient of Dam 5A as shown in Figure 2. Two effluent storage reservoirs are located in the southwestern part of the Project Area. Access and maintenance roads are located throughout the facility. Underground pipelines convey treated effluent to the site from the WRF, and farther from the effluent storage reservoirs to the Bruce Miller Ranch hay fields located to the north where it is permitted for surface application reuse. Two center-pivots are located within the existing Reuse Site which has been used as surface application reuse sites in the past but are not currently in use. The existing Reuse Site facilities are located on City-owned land, except for Dam 5C and the associated up gradient pond, which is located on BLM-administered land and operated by the City under right-of-way (ROW) N-55102.

A radio-controlled airplane landing strip is located within the Reuse Site as shown on Figure 2, used and maintained by a local radio-controlled airplane club.

2.2 PROPOSED ACTION

2.2.1 Land Acquisition

The proponent has made an application under the R&PP Act to attain approximately 808 acres of BLM-administered lands (casefile number N-85701). The proposed developments would occur on these lands and lands already owned by the City as shown on Figure 2.

Prior to patent, pursuant to 43 CFR 2743.2-1, the City would assure compliance with all Federal and State laws applicable to the disposal of treated effluent and would indemnify and hold harmless the United States against any legal liability or future costs that may arise out of any violations of such laws.

2.2.2 Proponent's Plan of Operations

Proposed activities have been outlined in a technical support memorandum (Knight Piésold and Co., 2008) and include the following:

- Installation of a new access road and utility corridor in Parcel A;
- Installation of a new fecal coliform monitoring station in Parcel A;
- Installation of infiltration galleries in Parcel A and within the existing Reuse Site;
- Installation of groundwater monitoring wells within Parcels A;
- Development of up to ten RIBs within the existing Reuse Site;
- Development of up to five RIBs in Parcel C;
- Installation of groundwater monitoring wells on Parcel C;

- Development of two new effluent storage reservoirs and a potential pump station on parcel D;
- Installation of groundwater monitoring wells on Parcel D;
- Installation of a pipeline from the existing distribution pond through Parcel C to the proposed effluent storage reservoir and to the existing effluent reservoir pump station; and
- Installation of additional groundwater monitoring wells within the existing Reuse Site.

2.2.2.1 Project Access

The Project Area is located approximately three miles southwest of Elko and can be accessed by traveling southwest on Bullion Road from Elko. The existing Reuse Site is located on an unnamed gravel road to the south of Bullion Road. A locked gate is maintained by the City on the access road.

2.2.2.2 Project Area Boundaries

The Project Area is located between approximately 5,040 and 5,300 feet above mean sea level (amsl). The Project Area encompasses the existing Reuse Site and the parcels of land proposed for acquisition as shown in Figure 2. The Project Area is bounded by private land to the north and west sides. To the south, the Project Area is bounded by topography not suitable for the development of reuse facilities, as shown in Figure 4.

2.2.2.3 Proposed Facilities

Rapid Infiltration Basins

Up to 15 RIBs would be constructed over the life of the Project to infiltrate and evaporate treated effluent as shown in Figure 2 (RIB numbers 5-19). The approximate surface areas of the planned RIBs are outlined in Table 2. Geotechnical investigations have been performed within the Project Area and the planned RIBs placed according to preliminary infiltration capacity results (Knight Piésold and Co., 2007a).

The RIBs would be operated and maintained according to the City of Elko Water Reclamation Facility Operations and Maintenance Manual (Knight Piésold and Co, 2007b), which would be updated to include the new RIBs as they are developed. Maintenance includes seasonal drying and scouring of the basins, as well as scraping and removal of fines as needed.

Prior to the construction of any RIBs designed to impound more than 20 acre feet of water, or designed with dams greater than 20 feet in height, the City would apply for a permit to impound water from the State Engineer, pursuant to the Nevada Revised Statutes (NRS) 535.010.

Table 2: Approximate Surface Area of Proposed RIBs

Rapid Infiltration Basin	Approximate Area in Acres[1]
5	4.4
6	10.0
7	9.0
8	4.5
9	4.5
10	5.4
11	1.8
12	5.9
13	11.8
14	5.3
15	3.4
16	2.2
17	4.1
18	3.2
19	9.1
Total	**84.6**

[1]Actual areas may change during final design

Effluent Storage Reservoirs

Two effluent storage reservoirs are planned within the Project Area as shown in Figure 2. The effluent storage reservoirs would be used to store effluent as needed for proper management of the RIBs, and to store effluent used for surface irrigation at nearby hay fields within the Bruce Miller Ranch or other permitted irrigation users between April 15 and October 15. The effluent storage reservoirs would have approximate surface areas of 27 acres each.

Operation and maintenance manuals for the effluent storage reservoirs would be updated to include the new facilities as they are constructed.

Prior to construction of the effluent storage reservoirs, the City would apply for a dam safety permit from the State Engineer to impound water, pursuant to NRS 535.010.

Roads

Access and maintenance roads would be constructed as new facilities are developed. Roads would be developed primarily around the outside of the RIBs and effluent storage reservoirs, and between facilities. The roads would be graded and maintained as necessary for year-round access to facilities as needed. Approximately 40 acres of roads would be established under the Proposed Action.

Pipelines

Treated effluent is currently conveyed from the WRF via a pipeline which runs from the WRF south to Bullion Road, and then parallels Bullion Road until it enters the Reuse Site (Figure 3). A new pipeline would be developed within the utility corridor alongside the new access road as

shown in Figure 2. Additional pipelines for the delivery of wastewater effluent would be developed within the Project Area as RIBs and effluent storage reservoirs are constructed.

Fences

Pursuant to NAC 445A.2752 the Project Area would be fenced to restrict public access and livestock to areas where treated effluent is being re-used. Proposed fences are shown on Figure 5. BLM-approved range fences would be installed along the west perimeter of Parcel B, the south perimeter of Parcel C, and along the south side of Bullion Road. The range fences would tie into pre-existing fences where possible. The range fences would allow for the passage of deer and antelope while not allowing for the passage of livestock.

A chain-link fence would be built around the perimeter of Parcel D upon construction of the lined effluent storage reservoirs. The chain-link fence would tie into the existing chain-link fence currently in place around the existing effluent storage reservoirs as shown in Figure 5.

Stormwater Controls

Diversion ditches would be constructed where necessary to prevent surface water runoff from entering the RIBs or effluent storage reservoirs. Infiltration galleries would be installed in drainages down gradient from the facilities as needed to control sedimentation.

Power Supply

Power would be supplied via existing power lines within the Project Area. If needed, further power lines would be added to service additional facilities.

Groundwater Monitoring Wells

Groundwater monitoring wells would be installed at up to ten locations within the Project Area as shown on Figure 4. Seven wells are currently monitored as required under the City's discharge permit NEV20014. Inclusion of additional wells under the discharge permit would be considered under updates to the permit as new wells and facilities are developed.

The drill sites would be approximately 30 feet wide by 50 feet long, equaling a disturbance area of approximately 0.034 acres each.

The monitoring wells would be developed in accordance with "Monitoring Well Design Requirements" (WTS-4, 1997) and pursuant to NRS 534.060.

Fecal Coliform Monitoring Station

At least one fecal coliform monitoring station would be installed down gradient of the planned RIBs as shown on Figure 4. Installation of the fecal coliform monitoring station would require a disturbance of approximately 0.034 acres.

Other Uses

Portions of the land considered for acquisition may be used in the future for other effluent or wastewater management and treatment purposes as needed by the City.

In the future, the City may use portions of the land considered for acquisition for recreational purposes. Recreational uses could include the development of sports fields, possibly permitting for additional outfalls under the NDEP discharge permit and utilizing water from the reuse

system for spray irrigation. Regulations regarding reuse categories, allowed uses, and restrictions would be followed.

2.2.2.4 Project Schedule

The proposed activities would commence upon acquisition of the land under consideration. Development of the site is anticipated to be conducted in a progressive phased manner over time. The plan needs to consider flexibility for variables such as population growth trends and budget which could dictate development schedules or priorities. A tentative schedule is outlined in Figure 6.

2.2.2.5 Permits

In addition to BLM approval of the R&PP Act application, the City would obtain the necessary state permits. Table 3 presents the major permits and authorizations that would be acquired as part of the Proposed Action.

Table 3: Permits and Authorizations

Issuing Agency	Permit Name
Bureau of Land Management	R&PP Act Patents
Nevada Division of Environmental Protection – Bureau of Water Pollution Control	Groundwater Permit
Nevada Division of Environmental Protection – Bureau of Air Pollution Control	Surface Area Disturbance Permit
Nevada State Engineer	Dam Safety Permit

2.2.3 Resource Protection Measures

Approval of the Proposed Action would include incorporation of the following best management practices (BMPs), and conditions.

2.2.3.1 Cultural Resources

The City would not remove, disturb, alter, injure or destroy any scientifically important paleontological remains; or any historical or archeological site, structure, building, object or artifact that qualifies for listing on the National Register of Historic Places (NRHP) or has not been evaluated for listing in the NRHP. The City would be responsible for ensuring that its employees, contractors or any others associated with the project do not damage, destroy, or vandalize archaeological, historical, or vertebrate paleontological sites or the artifacts/fossils within them. Should damage occur to the said objects or sites during the construction, operation, or rehabilitation due to unauthorized, negligent or inadvertent actions of the proponent or any other project-associated personnel, the proponent would be responsible for costs of rehabilitation or mitigation. Individuals involved in illegal activities could be subject to penalties under the Archaeological Resources Protection Act (16 U.S.C. 470ii), the Federal Land Management Policy Act (43 U.S. C. 1701), the Native American Graves and Repatriation Act (16 U.S.C. 1170) and other applicable statutes.

If human remains/burials or any previously unidentified cultural (archaeological or historical) resources or vertebrate paleontological resources are discovered during the conduct of activities under the Project, the City would immediately cease all activities within 300 feet of the discovery, insure that the discovery is appropriately protected and immediately notify the BLM by telephone, followed with written confirmation. Work would not resume and the discovery would be protected until the BLM authorized officer issues a notice to proceed.

Where feasible the project would be designed to avoid impacts to eligible or unevaluated cultural resources within or near the Project Area. Eligible or unevaluated cultural resources in proximity to proposed roads or other project activities would be revisited prior to initiating surface disturbing activities, and a 100-foot wide buffer would be established between such properties and the project activity. A lesser buffer could be approved by the BLM if a physical barrier exists between them.

If project redesign is not practical, or is not an effective method for mitigating adverse effects to cultural properties, data recovery in conformance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (36 CFR 61) would be conducted by the proponent. Once data recovery has been completed and accepted by BLM and the State Historic Preservation Officer, the BLM would issue a Notice to Proceed for work at that location.

If unevaluated sites cannot be avoided, additional information would be gathered and the site would be evaluated. If the site does not meet eligibility criteria as determined by the BLM, no further cultural work would be performed. If the site meets eligibility criteria, a data recovery plan or appropriate mitigation would be completed.

2.2.3.2 Livestock Grazing

BLM-approved range fences would be installed to keep livestock out of the Reuse Site as shown on Figure 5 and described in Section 2.2.2.3. The new range fences would tie into existing fences where possible. Locked gates would be constructed at access points and maintained by the City. The range fences would be built according to BLM standards for livestock exclusion, while still allowing for the passage of antelope and deer.

2.2.3.3 Survey Monuments

To the extent practicable, the City would protect all survey monuments, witness corners, reference monuments, bearing trees, and line trees against unnecessary or undue destruction or damage. If, in the course of construction or operations, any monuments, corners, or accessories are destroyed, the City would immediately report the matter to the authorized officer. Prior to destruction or damage during surface disturbing activities, the City would contact the BLM to develop a plan for any necessary restoration or re-establishment activity of the affected monument in accordance with Nevada Instruction Memorandum No. NV-2007-003 and the Nevada Revised Statues. The City would bear the cost for the restoration or re-establishment activities including the fees for a Nevada Professional Land Surveyor.

2.2.3.4 Air Quality

The City would acquire a Surface Area Disturbance Permit from the Nevada Division of Environmental Protection-Bureau of Air Pollution Control (BAPC) pursuant to NAC 445B.22037. Project-related traffic would observe prudent speed limits to enhance safety, protect

wildlife, and minimize dust (particulate) emissions. The outer embankments of the RIBs and effluent storage reservoirs, and other disturbed areas with no subsequent use would be reseeded with an approved seed mix as soon as practicable after construction.

2.2.3.5 Water Quality

Surface Water

The City would develop a Storm Water Pollution Prevention Plan (SWPPP) as required under the NDEP General Permit for Storm Water Discharge Associated with Construction Activity pursuant to 40 CFR 122.26(b)(14) and would follow any additional requirements set forth by the City for applicable construction activities over 6,000 square feet. The City would use erosion and sediment control BMPs as outlined in the City of Elko Construction Site Best Management Practices Handbook (Kennedy/Jenks Consultants, 2005).

Erosion and sediment control BMPs would also be used on smaller projects which are not already regulated under the NDEP General Permit for Storm Water Discharge Associated with Construction Activity.

Groundwater

The City's current discharge permit NEV20014 would be updated to include release of treated effluent to the groundwater through the proposed RIBs as they are developed. Up to ten new monitoring wells and one fecal coliform monitoring station are currently planned within the Project Area. The location of any new monitoring wells would be approved by the NDEP prior to effluent discharge. The monitoring wells would be used to monitor levels of constituents listed in the updated discharge permit.

The proposed effluent storage reservoirs would be designed for containment only and lined with an impermeable material. Leak detection systems would be installed at the facilities as well as groundwater monitoring wells. Pumps would be installed to operate in a pump-back system if a leak does occur.

2.2.3.6 Public Safety

The Project Area would be fenced as described in Section 2.2.2.3 and according to NAC 445A.2756 for reuse category B water. Locked gates would be installed at access points. The perimeter fences would be posted with signs disclosing the presence of treated effluent as required under NAC 445A.2752 and monitored as required.

2.2.3.7 Erosion and Sediment Control

A SWPPP would be developed and erosion and sediment control BMPs used as described in Section 2.2.3.5.

2.2.3.8 Noxious Weeds and Non-native Invasive Species

Employees and contractors would be educated to identify noxious weeds that could occur in the proposed disturbance areas. The City would take appropriate measures to prevent the spread of noxious weeds. Best management practices may include the following:

- Seeding growth media stockpiles as soon as practical with an approved seed mix;
- Using certified weed-free hay and straw;

- Using an approved seed mix to reduce invasive species over time by developing and maintaining desired plant communities; and,
- Treating areas infested with noxious and invasive weeds with approved chemical treatments for their control.

2.2.3.9 Wildlife including Migratory Birds

BLM-approved range fences would be installed as shown on Figure 5 and described in Section 2.2.2.3. Locked gates would be installed at access points. The fences would allow for the passage of deer and antelope while preventing the passage of livestock. A chain-link fence would be installed around the lined effluent storage reservoirs as shown in Figure 5 to prevent the entry of larger wildlife.

Land clearing and surface disturbance would be timed to prevent destruction of active bird nests or of young birds during the avian breeding season for low elevation sagebrush and salt desert scrub habitats (April 1 to July 31, annually in accordance with the Tuscarora Field Office policies). If it becomes necessary to clear land during the breeding season, a survey for active nests would be conducted by a qualified biologist within areas to be cleared. If active nests are located, a protective buffer zone would be established. The size of the buffer zone and length of time it should remain in place would be based on the species identified and would be approved by Nevada Division of Wildlife (NDOW) biologists.

On new power lines, single pole structures with no cross bars may be considered for use wherever possible to prevent perching and nesting opportunities for predatory birds including raptors, ravens, and crows. This action would be completed in consultation with power company biologists, BLM environmental specialists, or NDOW biologists.

On existing power lines and other overhead lines, the City would install anti-perching/anti-nesting devices on the power line poles to discourage the perching and nesting of raptors, ravens, and crows. Pole caps and Lexan-type “inverted-Y” configuration deterrents may be considered per consultation with power company biologists, BLM environmental specialists, or NDOW biologists.

Visual flight collision deterrent devices would be installed on new or existing power lines within, and at least one span away from created water bodies to reduce potential collisions associated with birds flying into power lines. Coil spring diverters in alternating gray, white, and yellow colors combined with “Bird Mark” or other medallion-type flight diverters would be considered for use, alternating every 15 feet on top wires to highlight the transmission line under various light conditions.

Flight diverter devices and predatory bird perching and nesting deterrents would be tailored to site-specific conditions, such as average wind speed and line height and would conform to power company specifications. These devices would be maintained, or replaced as necessary, for the life of the project.

2.2.3.10 Growth Media Resources

Growth media would be salvaged from disturbed areas for reclamation activities. Growth media would be stockpiled adjacent to the respective developments until relocated to disturbed areas and reseeded. Growth media stockpiles would be reseeded as described in Section 2.2.3.8 if not used within that season.

2.2.3.11 Visual Resources

BMPs for visual resources would be used for developments within the Project Area. This includes painting structures natural colors based on the BLM's Standard Environmental Colors chart, using non-reflective metals, and the placement of soils. Attempts will be made to design structures to repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape based on completed visual contrast rating worksheets.

2.3 NO ACTION ALTERNATIVE

Within the existing Reuse Site, the City is currently utilizing eight RIBs for the infiltration of treated effluent, two lined effluent storage reservoirs, and one distribution pond. The City also has a right-of-way for emergency Dam 5C. The facilities are accessed and connected by dirt roads. Pipelines distribute treated effluent from the WRF to and between the facilities. Power is supplied via overhead power lines.

Under the No Action alternative, the Proposed Action would not be approved by the BLM. The R&PP Act application would not be approved, and the City would not expand the Reuse Site onto the parcels proposed for acquisition. The City would continue to utilize the existing facilities located on land controlled by the City.

As a result of the No Action alternative, the Reuse Site may become taxed as the City population and per capita effluent production continues to increase following recent trends. The infiltration capacity of the existing Reuse Site may not be sufficient to allow for proper operation and maintenance of the Reuse Site.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

Relocating the Reuse Site Expansion

The Reuse Site is currently landlocked by BLM-administered land and private land. Relocating the planned facilities to another location not adjacent to the existing Reuse Site would have ramifications in the further construction of additional roads and pipelines. This alternative has not been considered under this assessment.

Further Developments Within the Existing Reuse Site

According to the technical support memorandum (Knight Piésold and Co., 2008) many of the proposed developments occur within the land already owned by the City. Commencing with the developments restricted to City-owned land without acquiring the adjacent lands would allow the City to increase their infiltration, evaporation, and holding capacity for treated effluent, but

would not provide the City with the management and monitoring options required to properly handle the expected increase in effluent production. This alternative has not been considered under this assessment.

Creation of Constructed Wetlands

Some municipalities have used treated effluent in wetland enhancement projects. In such a system the treated effluent is disposed through a combination of evaporation, transpiration, and percolation while providing habitat for wetland-based flora and fauna. The City is currently disposing of their effluent under NDEP groundwater discharge permit NEV20014. This permit authorizes percolation of treated effluent to and does not allow for the disposal of treated effluent through surface flows to the Humboldt River. The proposed and existing RIBs used for evaporation and percolation require yearly maintenance such as scouring which is not conducive for the growth wetland vegetation. Dams designed to impound more than 20 acre feet of water or greater than 20 feet in height require a dam safety permit to impound water from the State Engineer, pursuant to the Nevada Revised Statutes (NRS) 535.010. These dams would require maintenance as stipulated in the permit, including inspections for and removal of heavy vegetation and rodents. Such required maintenance is also not conducive for wetland flora and fauna. Because of the maintenance activities noted above, and the location of the existing Reuse Site above the Humboldt River, this alternative has not been considered and eliminated from further analysis.

Discharge to Humboldt River

Discharging treated effluent to the Humboldt River would require the City to obtain a National Pollution Discharge Elimination System (NPDES) permit from the NDEP. Due to the expense of acquiring and maintaining an NPDES permit, the City wishes to continue operations under their present groundwater permitting strategy. This alternative has been eliminated from further analysis in this assessment.

3 AFFECTED ENVIRONMENT AND EFFECTS OF THE ALTERNATIVES

3.1 SCOPE OF ANALYSIS

In preparation for this EA, potentially affected elements and resources were reviewed by BLM specialists and identified as being not present, present and affected, or present and not affected.

Elements found to be present and affected which are considered in this EA are:

- Cultural Resources;
- Environmental Justice;
- Flood Plains;
- Migratory Birds;
- Native American Concerns;
- Non-native, Invasive Species;
- Threatened, Endangered, and Special Status Species;
- Wastes, hazardous or solid;
- Water Quality, surface and ground;
- Wetlands/Riparian; and
- Visual Resources.

Other resources and uses found to be present and affected which are analyzed in this EA are:

- Fire;
- Geology;
- Lands and Access;
- Livestock and Grazing/Range;
- Socioeconomics;
- Soils;
- Vegetation; and
- Wildlife.

Resources present and brought forward for analysis for each alternative are discussed in the following subsections. Each sub-section describes the affected environment and direct and indirect impacts associated with the Proposed Action alternative, including the mitigating effects of the proposed environmental protection measures, as compared to the No Action alternative. The subsections then conclude with the analysis of cumulative effects on the affected resource or use.

3.2 CUMULATIVE IMPACTS

Cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes such other actions (40 CFR 1508.7).

Past and Present Actions

The existing reuse facilities on Section 32 were built in the 1980's. Reuse activities have been occurring on this site since this time. The construction of the effluent storage reservoirs located on T. 33 N., R. 55 E., Section 6 followed the acquisition of the land under the R&PP Act in 1998. Treated effluent has been stored in the reservoirs since then.

The infiltration of treated effluent into the groundwater has the potential to affect the groundwater quality down gradient of the area. Although no surface connection between the Project Area and Humboldt River has been observed, seepage water could potentially affect the water quality of the Humboldt River via catastrophic failure of the dams or the down gradient surface expressions of seepage water which could form a surface connection with the Humboldt River.

Two ponds have been created up gradient from dams 5C and 5A. Riparian and wetland flora and fauna are now present within this area. Treated effluent is being pumped to and used for irrigation at nearby hayfields located north of the existing Reuse Site.

Construction at the Reuse Site has potentially caused an increase in local erosion and the spread of non-native and invasive species through the clearing of land. The clearing of land has also potentially affected wildlife through the removal of habitat.

The Project Area has historically been used for grazing under the Bullion Road allotment. Some of the grazing allotment area has been lost during land sales to the City of Elko, and fenced off to prevent the entry of cattle into the Reuse Site. Types of impacts from livestock grazing could potentially include change in vegetation diversity, increased erosion, and impacts to water quality. Overutilization could increase the spread of non-native invasive species. The presence of cattle may also affect small wildlife and birds through the destruction or alteration of habitat, forage and nesting sites.

There has been no recorded leasable or salable mineral extraction or exploration within the Project Area. There is one active non-producing oil and gas lease (NVN-077925) within the Project Area, located in T. 34 N., R. 55 E., Section 32. No active mineral claims were found to exist within a five-mile radius of the Project Area.

Recreation within the Project Area is minimal. Some unmaintained dirt roads exist within the Project Area. Dumping of trash and other debris has been frequent with the Project Area, especially within areas adjacent to Bullion Road. Off-road vehicle recreation is frequent within Four Mile Canyon. The historic Hamilton Stage Route is located to the east of the Project Area leading to the South Fork State Recreation Area and the South Fork Humboldt River Canyon, route of the Donner-Reed party.

Reasonably Foreseeable Future Actions

Development of reuse facilities beyond what is already described under the Proposed Action is not anticipated as the capacity of the planned developments should accommodate the City's reasonably foreseeable population growth and effluent production.

Lands to the east of the Project Area have been purchased by the development company Prime West Elko, LLC (Prime West). Lands owned by Prime West include parcels located in all or part of the following: T. 34 N., R. 55 W., Sections 22, 23, 26, 27, 33, and 35. Prime West has been seeking annexation of part of these lands with the City. Developments can be expected to occur within this area. Developments by other companies and private landowners could also be expected on private lands in the area.

City and County plans include the further development of local transportation routes, including an extension of Errecart Boulevard from Bullion Road to the Elko General Hospital, currently accessed from Lamoille Highway. No known large commercial developments are planned in the general area.

Fire has the potential to cumulatively affect many resources including air quality (short-term impacts from smoke and long-term impacts from fugitive dust), water quality and quantity (short-term impacts of increased sedimentation and long-term impacts to water quality and quantity); livestock grazing, wildlife, and special status species (short-term loss of grazing and habitat, displacement, and long-term loss of populations), soils (short-term increase in erosion and windblown dust and long-term loss of upper soil horizons), vegetation (removal of decadent vegetation and return to an earlier seral stage), non-native invasive species (short- and long-term impacts from establishment of non-native invasive species), and recreation (short-term loss of recreation opportunities).

Past, present, and reasonably foreseeable actions that may cumulatively affect resources discussed in the following sub-sections are listed in Table 4.

Table 4: Summary of Activities with Potential Cumulative Impacts

Action	Description	Potential Impacts
Livestock Grazing	Project Area is located within the Bullion Road allotment.	Vegetation may be preferentially grazed in upland areas; concentration of livestock around water sources may lead to increased sedimentation and loss of soil/vegetation; overutilization could increase the spread of non-native invasive species
Development	Development of private lands and City lands, particularly potential development by Prime West.	Potential short-term and long-term effects to water and air quality, loss of wildlife habitat, increased area of urban/wildland fire interface, long-term loss of unofficial recreational areas within Four Mile Canyon. Loss of grazing areas on private lands.
Fires	Fires have burned in recent years within the CESA.	Potential short-term and long-term impacts to air, water quality and quantity; livestock grazing, wildlife,

Action	Description	Potential Impacts
		and special status species and their habitat; soils; non-native invasive species; and recreation.

3.3 CULTURAL RESOURCES

A Class III cultural resources survey was conducted on the approximately 808 acres of land under consideration for acquisition in September of 2008. The survey was conducted to determine the presence or absence of cultural resources (Report No. BLM 1-2689). The inventory was designed to locate cultural resources and evaluate their eligibility to the National Register of Historic Places. A total of 18 isolated artifacts and 28 archaeological sites were identified during the field survey. Of the 28 sites, 14 are prehistoric, nine are historic, and five are both historic and prehistoric. Twelve of the 28 sites were previously recorded.

One of the sites (CrNV-01-1949) was previously determined as eligible under the National Register under Criterion D, for its potential to address research questions. Test excavations on August 15-16, 2009 obtained information needed for the preparation of a treatment plan. The plan will be reviewed by the Nevada State Historic Preservation Office (SHPO), and implemented by the BLM Elko District over the next few years. This effort would be guided by a Programmatic Agreement (PA) between the BLM Elko District, the City, SHPO, and possibly other interested parties. The PA would obligate the signatories to complete the data recovery (or archaeological excavations) at CrNv-01-1949 in compliance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) of the Archeological Resources Protection Act and its implementing regulations (36 CFR part 800), and the protocol that exists between BLM Nevada and SHPO.

It has been agreed that the City would not be responsible for mitigation costs. The City would contribute by performing periodic patrols to the area with law enforcement and/or patrols by other City personnel. If any disturbances to the site are noticed the City would notify BLM Interagency Dispatch Center. The City would also support field work by providing portable toilets and drinking water up to one week a year for excavation events. A memorandum of understanding (MOU) would be drafted between the City and the BLM outlining these responsibilities.

3.3.1 Effects of the Alternatives

Proposed Action

The 18 isolated artifacts and 27 of the archaeological sites identified in the cultural resource inventory (report BLM 1-2689) are not eligible for the NRHP. These sites may be disturbed or destroyed during development activities under the Proposed Action. Because cultural resources would lose protection under various federal laws when they are transferred to the City of Elko, a PA is needed to continue to provide protection to site CrNv-01-1949 until the completion of data recovery. The City would assist BLM with monitoring site CrNv-01-1949 as stipulated in the MOU to reduce the threat of illegal looting or other unauthorized damage until data recovery is completed.

No Action Alternative

Under the No Action alternative there would be no developments by the City within the parcels proposed for acquisition and thus no potential impacts to cultural resources identified within these parcels. Excavation of site CrNV-01-1949 would likely continue has the site has already been disturbed during the test excavation. Cultural resources would continue to be degraded by off-road and other authorized and unauthorized land use in the area.

3.3.2 Cumulative Impacts

Impacts to cultural resources from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.4 ENVIRONMENTAL JUSTICE

The study area for environmental justice encompasses Elko County, including the cities of Elko and Carlin.

Identification of Minority and Low Income Populations

The Council on Environmental Quality identifies groups as environmental justice populations when either the minority or low-income population of the affected area exceeds 50 percent, or the minority or low-income population percentage in the affected area is meaningfully greater than in the minority population percentage in the general population or appropriate unit of geographical analysis. In order to be classified as meaningfully greater, a formula describing the environmental justice threshold as being 10 percent above the State of Nevada rate for Elko County and 10 percent above Elko County rate for communities within the county rate is applied to local minority and low-income rates. For purposes of this section, minority and low-income populations are defined as follows:

Minority populations are persons of Hispanic or Latino origin of any race, Blacks or African Americans, American Indians or Alaska Natives, Asians, and Native Hawaiian and other Pacific Islanders (Council on Environmental Quality, 1997).

Low-income populations are persons living below the poverty level. In 1999 the poverty weighted average threshold for a family of four was $17,029 and $8,501 for an unrelated individual (Census bureau, 2000).

Estimates of these two populations were then developed to determine if environmental justice populations exist in or near the Project Area.

The Proposed Action is located in Block Group I of Census Tract 9512 as shown on Figure 7. The Project is located adjacent to census blocks 1137-1140 and 1142-1161 to the west and 1129 to the north as shown on Figure 7. The Project Area overlies census blocks 1119-1123, 1125, 1132, 1135, and 1166. Review of the 2000 Census reveals that of the adjacent and overlapping census blocks, ten were populated during the 2000 Census: 1123, 1125, 1132, 1137, 1138, 1138, 1142, 1147, 1148, and 1160. As a result, the populated blocks were evaluated as the affected area. Poverty data is not available at the census block level, therefore, Census Block I was evaluated as a whole for the identification of low-income populations.

Minority Composition

Information regarding the ethnic composition of populations located within the affected blocks is provided in Table 5. Comparative information is also provided for Census Block I, Census Tract 9512, the City of Elko, Elko County, and the State of Nevada.

Minority populations in Census Tract 9512 and Census Block I are less than 50 percent and as compared to Elko County, Census Tract 9512 and Block Group I are less ethnically diverse with respective minority percentages of 21 and 13 as compared to 29 for the County. The affected blocks have a total population of 162 and a minority percent of 11. As a result the affected blocks do not represent a minority population.

Table 5: Minority and Low-income Populations

Jurisdiction	Total Population	Percent Minority	Percent Below Poverty (1999)
State of Nevada	1,998,257	37	10.5
Elko County	45,291	29	8.9
City of Elko	16,708	28	8.2
Census Tract 9512	6,698	21	6.4
Block Group I	3,458	13	3.9
Affected Blocks	162	11	-

Source: U.S. Census Bureau, Census 2000

Low-Income Composition

The second element of environmental justice is the potential for disproportionate impacts to populations living below the poverty threshold. Information regarding the low-income populations located within the Block Group I is provided in Table 5. Comparative information is also provided for Census Tract 9512, the City of Elko, Elko County, and the State of Nevada.

Low-income populations in Census Tract 9512 and Census Block I are less than 50 percent and as compared to Elko County, Census Tract 9512 and Block Group I have lower poverty rates with respective percentages of 6.4 and 3.9 as compared to 8.9 for the County. As a result, Block Group I of Census Tract 9512 does not represent a low-income population.

3.4.1 Effects of the Alternatives

Proposed Action

Direct and indirect impacts associated with the Proposed Action would not have a disproportionate affect on minority or low income populations in the Project Area. A review of Census 2000 data indicates that the affected blocks do not contain representatives of a minority population, and Census Block I does not represent a population living below poverty level. As a result, the Proposed Action would not have a potential to disproportionately impact a minority or low income population.

No Action Alternative

As Census 2000 data indicates that the affected blocks do not contain representatives of a minority population, and Census Block I does not represent a population living below poverty level. Impacts relating to environmental justice would not occur under the No Action alternative.

3.4.2 Cumulative Impacts

Impacts to minority of low income populations from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.5 VEGETATION INCLUDING WETLANDS/RIPARIAN

The lands surveyed for the Proposed Action are comprised of four main vegetative communities consisting of Wyoming big sagebrush/rabbitbrush, basin big sagebrush/rabbitbrush, salt desert shrub, and riparian/wetland.

Wyoming big sagebrush/rabbitbrush is the dominant plant community within the Project Area. It includes Wyoming big sagebrush (*Artemesia tridentate* spp. *Wyomingensis*), rubber rabbitbrush (*Ericameria nauseosa*), Douglas rabbitbrush (*Chrysothmnus viscidiflorus*), spiny horse-brush (*Tetradymia spinosa*), crested wheatgrass (*Agropyron cristatum*), Sandberg bluegrass (*Poa sandbergit*), bottlebrush squirreltail (*Elymus elymoides*), basin wildrye (*Leymus cinereus*) intermediate wheatgrass (*Agropyron intermedium*), cheatgrass (*Bromus tectorum*), and mustard (*Cruciferae* spp.).

A small portion of Parcel A is dominated by the basin big sagebrush/rabbitbrush community comprised of basin big sagebrush (*Artemesia tridentate* spp. *Tridentate*), Douglas rabbitbrush, Sandberg bluegrass, halogeton (*Halogeton glomeratus*), and rocky mountain aster (*Aster adscendens*).

Parcel E and portions of Parcel A located northwest of Bullion Road were dominated by the salt desert scrub plant community, comprised of fourwing saltbush (*Atriplex canescens*), spiny hopsage (*Grayia spinosa*), basin big sagebrush, halogeton, mustard, prickly pear cactus (*Opuntia* sp.), Douglas rabbitbrush, lambsquarters (*Chenopodium album*), and bunchgrass.

The area immediately surrounding and up gradient of the Dam 5C Pumpback Pond is dominated by riparian/wetland plant community, comprised of rush (*Juncus* sp.), sedges (*Carex* sp.), cattail (*Typha* sp.), bottlebrush squirreltail, alkali sacaton (*Sporobolus airoides*), dock (*Rumex* sp.), foxtail barley (*Hordeum jubatum*), spiny sowthistle (*Sonchus asper*), willow (*Salix* sp.), Russian thistle (*Salsola iberica*), halogeton, cheatgrass, mustard, salt grass (*Distichlis spicata*), Wyoming big sagebrush, Douglas rabbitbrush, parsley (*Lomatium* sp.), and wild rose (*Rosa woodsii*).

A Waters of the United States delineation survey and report was completed in December of 2008 to assess the presence or absence of jurisdictional resources within the Project Area, as defined by 40 CFR 230.3 and 33 CFR 328.3. The report concluded that USACE jurisdictional resources do not exist within the Project Area. The report was sent to the United States Army Corps of Engineers for determination. A jurisdictional determination letter has not yet been received by the City. The City will act in accordance with the decision of the jurisdictional determination letter.

3.5.1 Effects of the Alternatives

Proposed Action

Vegetation would be lost during the construction of facilities planned under the Proposed Action. Approximately 180 acres would be cleared of vegetation and not reseeded for the construction of RIBs, effluent storage reservoirs, and roads. This is equivalent to approximately 2.4 percent of the Bullion Road allotment area and less than one percent of Hunting Unit 65.

Development within lands dominated by the salt desert shrub plant community would be minimal. No development is planned immediately around or up gradient of the 5C Pumpback Pond where riparian/wetland plant communities are found. Disturbed areas which need not remain clear of vegetation would be reseeded for noxious and invasive species control and erosion and sedimentation prevention and control as described in sections 2.2.3.5 and 2.2.3.7. The reclaimed areas would have a different plant composition that what is found in adjacent areas. The reclaimed areas would likely have a less diverse composition than undisturbed areas and there would likely be an increase in annual weedy species.

Supposing that the USACOE confirms the findings of the WOUS survey and report, that no jurisdictional resources are located within the Project Area, there would be no impacts to jurisdictional resources under the Proposed Action.

No Action Alternative

Impacts from previously authorized activities would continue under the No Action alternative such as impacts related to preferential cattle grazing, and occasional vegetation loss related to the operation and maintenance of the existing Reuse Site. Impacts may also occur due to natural events such as precipitation, wildfire, and vegetation succession.

3.5.2 Cumulative Impacts

Impacts to vegetation, including riparian zones, from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.6 FIRE MANAGEMENT

Since 1980, only one fire has occurred within the Project Area as shown on Figure 8. Ten recorded wild land fires have occurred south of the Humboldt River and within approximately five miles of the Project Area since 1995. The fires are listed in Table 6 and shown on Figure 8.

Table 6: Fires in Vicinity of Project Area since 1980

Name	Year	Approximate Acres Burned
South Fork	1995	631
Omni	2000	421
West Bullion	2001	336
Ten Mile	2003	150
VOR	2005	330
Hamilton	2005	201
Emigrant	2006	262
Burning Chair	2006	408

Name	Year	Approximate Acres Burned
East Humboldt	2006	8,638
Lion	2006	30

Data Source: BLM Shapefile, 2008

The Project Area is located close to land being developed for housing and could be considered as an important area for wild land and urban interfacing for fire management activities.

The treated effluent, being Reuse Category B water, can be used for fire suppression activities in urban or wildland settings if approved by the firefighting agency in whose district the fire occurs NAC 445A.2764. The treated effluent could be accessed at the Reuse Site for use at nearby fires.

3.6.1 Effects of the Alternatives

Proposed Action

Under the Proposed Action, much of the land being considered for acquisition would be fenced off from the public, restricting access to and thus decreasing the chances of human-caused fires within the Project Area. The proposed development under the Proposed Action would include maintained roads to lands which did not previously have maintained roads. The roads would serve as natural fire barriers and would provide access throughout the Project Area for fire suppression use. The proposed developments would also include the development of RIBs and effluent storage reservoirs. These bodies of water, along with the associated cleared land, would serve as fire barriers.

Land clearing associated with the Proposed Action may be followed by seeding as described in Section 2.2.3.8., altering the existing fuel types of the Project Area. The addition of overhead power lines could create a fire hazard and a hazard for fire fighters.

No Action Alternative

Under the No Action alternative, the potential for fires to occur within the Project Area, and the potentials for accessing and suppressing them would remain unchanged from the current situation.

3.6.2 Cumulative Impacts

Impacts on fire management from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.7 FLOOD PLAINS

The presence of Flood Plains was determined using Federal Emergency Management Agency (FEMA) flood insurance rate maps. Risk of flooding is based on historic, meteorologic, hydrologic as well as open-space conditions, flood control works, and development.

An area designated as Flood Zone A, the area of the 100-year flood, is present in the northeastern corner of T. 34 N., R. 55 E., Section 29. The exact extent of this zone is not known as the FEMA survey data is not complete. Due to the topography, Flood Zone A is likely confined to the area between the railroad bed to the north and Bullion Road to the south. The FEMA flood zones and the estimated flood zone within T. 34 N., R. 55 E., Section 29 are shown on Figure 4.

3.7.1 Effects of the Alternatives

Proposed Action

The proposed development under the Proposed Action would occur on the south side of Bullion Road. Assuming that Flood Zone A as denoted by FEMA is restricted to the north side of Bullion Road, the proposed development would not affect or be affected by potential flooding.

No Action Alternative

The existing Reuse Site is not located within any flood zones, thus impacts relating to flood plains would not occur under the No Action alternative.

3.7.2 Cumulative Impacts

Impacts on flood plains would be negligible. Therefore, no cumulative impacts would occur.

3.8 GEOLOGY

Surface deposits within the Project Area are Quaternary alluvial deposits consisting of well-rounded cobbles, gravels, sands, and silts of the Humboldt River floodplain overlying older alluvium consisting of lacustrine deposits and basin-filling alluvial fan deposits. Tertiary aged cherty limestone with siltstone and claystone inter-beds forms the highest topographic relief within the Project Area. The surface geology is shown on Figure 9.

The mineral potential for locatable minerals (gold, silver, copper) is low on the subject parcel.

The subject parcel lies in an area described by Garside, Hess, Fleming, and Weimer (1988) as having moderate potential for oil and gas. No oil and gas wells are located on or in the vicinity of the Project Area, however, there are active oil and gas leases in several sections.

Geothermal resources may be encountered at depth on the subject parcel. The nearest geothermal activity to the Project Area is the Hot Hole, approximately one mile to the northeast. Young northeast trending faults in northern Nevada, such as the Elko fault which parallels the property approximately one-half mile to the east, tend to yield high temperature geothermal systems and therefore, favorable targets for geothermal exploration. The potential for geothermal resources is moderate.

There are no mineral material rights-of-way within the subject parcel. The Humboldt River floodplain alluvium could be screened and sorted for aggregate but nearby private residences make it unlikely that this resource could be developed. The mineral potential for the floodplain alluvium is moderate. The older alluvium contains a large amount of clay which would render it expensive to produce, therefore, the mineral potential for older alluvium is low.

3.8.1 Effects of the Alternatives

Proposed Action

The R&PP Act, 43 CFR 2740.0-6(c), requires that the lands be conveyed with a reservation of the mineral estate to the United States. Due to directional drilling techniques, leasable mineral (oil/gas and geothermal) development would be compatible with the Reuse Site developments proposed for the R&PP lease/patent. Surface use required for extraction of locatable minerals

would not be compatible with the proposed Reuse Site developments, however, the mineral potential for locatable minerals is low and the land would be segregated from mineral entry. Likewise, use of the parcels for mineral material extraction would not be compatible. The mineral potential for saleable materials is low to moderate and there are alternative sources from which sand and gravel could be sold.

No Action Alternative

Under the No Action alternative, there would be no change to availability of minerals.

3.8.2 Cumulative Impacts

Impacts on minerals from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.9 LANDS AND ACCESS

The existing Reuse Site is currently fenced off to the public as required by NAC 445A.2752. Existing fences are shown on Figure 5. Locked gates have been installed on access roads. The parcels considered for acquisition are currently not fenced in. Bullion Road traverses through the northern end of Parcel A. Some un-named two-track dirt roads traverse portions of the parcels under consideration for acquisition. A radio-controlled airplane landing strip is located within the existing Reuse Site as shown on Figure 2. It is used and maintained by a local radio-controlled airplane club.

There are currently ten ROWs located within the Project Area as listed below in Table 7.

Table 7: Right of Ways within the Project Area

Serial Number	Holder	Location within Project Area		Item
		Township and Range	Section	
NVN 039849	City of Elko	T34N, R55E	29	Pipeline and road
NVN 042787	Sprint Communications Co. Ltd.	T34N, R55E	29	Buried fiber optic cable
NVN 043924	Sierra Pacific Power Co.	T34N, R55E	29	Overhead distribution line
NVN 055102	City of Elko	T34N, R55E	32	Sewage treatment facility
NVN 058315	City of Elko	T34N, R55E	32	Fence
NVN 061260	Citizens Comm.	T34N, R55E	21	Buried telephone line
NVN 061800	BLM	T34N, R55E	28	Fence
NVN 062370	City of Elko	T34N, R55E	32	Pipeline and road
		T33N, R55E	5	
NVN 062432	Sierra Pacific Power Co.	T34N, R55E	32	Power line
		T33N, R55E	5	
NVN 074438	William Crane	T34N, R55E	29	Access road

Bullion Road is located along the northern part of Parcel A, running north-east to south-west. This road is administered by Elko County. As it is an historic road, there are no official records or descriptions defining its location (Tipton, 2009).

3.9.1 Effects of the Alternatives

Proposed Action

Under the Proposed Action the parcels considered for acquisition would be fenced to restrict public access as required by NAC 445A.2752. Signs would be placed along the fences disclosing the presence of treated effluent. The proposed fences are shown on Figure 5. The fenced area would be limited to the southern side of Bullion Road. Most of the fences would be BLM-approved range fences which would allow for the passage of wildlife. The fence around the proposed lined effluent storage reservoirs would be chain link to prohibit the entrance of large wildlife and domestic animals. Gates with locks would be installed along all access roads leading into the fenced area.

The lands proposed for acquisition are very close to populated areas within Elko County and the City of Elko. The parcels are furthermore not part of a continuous corridor of BLM-administered lands but rather a peninsula at the edge of sections fragmented by various land ownership as shown on Figure 2. These lands have experienced high occurrences of illegal dumping which have required BLM funding and attention for clean-up. Disposal of these lands would release BLM from funding and time for use on other parcels of land. Under City ownership much of this land would be fenced off to restrict public access and likely reduce illegal dumping on these parcels.

The R&PP Act land purchase section of the Proposed Action is also consistent with 43 CFR 2710.0-3 which states the Department of the Interior is authorized to sell lands if the sale of the tract meets any of the listed criteria. Two of the criteria met by the lands being considered by the Proposed Action are:

- Disposal of such tract shall serve important public objectives, including but not limited to, expansion of the communities and economic development, which cannot be achieved prudently or feasibly on lands other than public lands and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership (43 CFR 2710.0-3(2)); and
- Such tract, because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands and is not suitable for management by another Federal department or agency (43 CFR 2710.0-3(3)).

Existing ROWs would be transferred to the City under the Proposed Action. The City would then continue with the management of the existing ROWs including monitoring and renewals. Access to the radio-controlled airplane landing strip for club members would continue. Bullion Road would remain under the ownership and management of Elko County.

No Action Alternative

Impacts relating to lands and access would not occur under the No Action alternative. Existing ROWs within the parcels considered for acquisition would continue to be managed by the BLM.

The parcels considered for acquisition would remain open to mineral resource leasing and development.

3.9.2 Cumulative Impacts

Impacts on land use and access from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.10 LIVESTOCK GRAZING/RANGE

The Bullion Road allotment encompasses approximately 7,765 acres, of which approximately 3,940 acres or 51 percent is administered by the BLM, 3,825 acres or 49 percent is privately owned, of which approximately 801 acres or ten percent is owned by the City as part of the existing Reuse Site. The distribution of BLM-administered and privately owned lands can be seen on Figure 5. The distribution of BLM-administered lands resembles a checkerboard pattern, with very few sections of BLM-administered land sharing borders.

The Project Area is located within Bullion Road allotment as shown on Figure 5. Mr. Eugene Buzzetti and Mr. Jake Reed have grazing privileges on the allotment. The grazing permit details are provided in Table 8.

Table 8: Bullion Road Allotment Grazing Permit Detail

Permittees	Livestock No. and Type	Grazing Period	Percent Public Land	Active Preference AUMs
Eugene E. Buzzetti	50 Cattle	05/1 - 07/13	91	111
	75 Cattle	07/14 – 09/03	53	68
Jake Reed	1 Cattle	5/1 – 5/30	100	1

Source: Justin Rodgers, BLM, 2009

Historical water sources within the allotment include: a water well located within the Four Mile Canyon allotment in T. 34 N., R. 55 E., Section 33 with two water tanks, one located next to the well and one located in T. 34 N., R. 55 E., Section 32; a water well located in T. 33 N., R. 55 E., Section 7 on private land (range improvement 1031); a spring development located on T. 33 N., R. 55 E., Section 8; a reservoir located on T. 33 N., R. 55 E., Section 8 (range improvement 0170); and the South Fork River on the southwestern border of the allotment. The spring development and reservoir are both unreliable seasonal water sources, and access to the water tank from the Four Mile Well within the Bullion Road allotment is now located on City property and inaccessible to cattle. The four Mile Well and adjacent trough is located on land now owned by Prime West. Since the water well located on T. 33 N., R. 55 E., Section 7 is on private land owned by Dan and Tamara Fisher, access to this water source is also uncertain.

In 1998, 40 AUMs were removed from the grazing permit resulting from the authorization of the City of Elko Effluent Storage Reservoir R&PP (N-62223). Due to wildfires in 2006, a grazing closure decision was issued suspending the total active preference and temporarily closing the allotment to grazing until rehabilitation objectives described in the decision are met. Monitoring

of the burned area from 2008 and 2009 are currently being evaluated and a decision to resume grazing is pending.

Five range improvements are located within the Project Area as shown on Figure 5. Improvement 4047 was previously described. The components of this improvement are in a state of disrepair. Improvement 4192 is an enclosure fence erected around a weed treatment area listed as improvement 4184, the Bullion Spray Plot. Evidence of the fence and spray plot were not located during field visits. Improvement 1159 is the Buzzetti Protective Fence, and improvement 4312 is listed as the Buzzetti Seeding improvement, where drill seeding of crested wheat was performed.

Pursuant to 43 CFR 2711.1-3, sale of lands which preclude grazing would not be made until the permittee and lessees are given a two-year notification that their grazing lease or preference may be cancelled. The notice of realty action would serve as the official notice to the permittee of the start of the two-year notification period. The permittee may continue to graze their animals on the land until the two-year period has ended. The permittee may also choose to waive the two-year notification period. The permittee has not chosen to waive the two-year notification period at this time.

Pursuant to 43 CFR 4120.3-6, whenever a grazing permit or lease is cancelled in order to devote the lands to another purpose, the permittee or lessee would receive reasonable compensation from the United States for the adjusted value of their interest in authorized and affected range improvements. The permittee may also choose to salvage the range improvements and perform rehabilitation in lieu of compensation.

3.10.1 Effects of the Alternatives

Proposed Action

The acquisition of the proposed BLM-administered parcels by the City would result in the loss of 78 active preference AUMs from the Bullion Road allotment. The acres and the respective pasture types which would be affected are listed in Table 9.

Table 9: Grazing Allotment Area within the Project Area

Parcel(s)	Approximate Acres of Allotment	Pasture
A & E	378	Seeding Pasture
B	150	Seeding Pasture
C	148	Seeding Pasture
D	114	Seeding Pasture
	17	Native

Under the Proposed Action, approximately 4,632 acres or 60 percent of the land within the Bullion Road allotment would be privately owned or controlled by the City. Approximately 3,133 acres or 40 percent of the Bullion Road allotment would be administered by the BLM, equaling a loss of approximately nine percent of the BLM-administered land from the allotment.

The piping and water trough components of improvement 4047 are located on land owned by the City and would thus not be effected by the Proposed Action. The well and trough components of improvement 4047 located on privately owned land within T. 34 N., R. 55 E., Section 33 would also not be affected by the Proposed Action. A section of improvement 1159 would be removed

during the construction of the effluent storage reservoirs and placement of the chain link fence as illustrated in Figure 5. The chain link fence would then serve to separate the grazing allotment from Parcel D. Most of improvement 4312, the Buzzetti Seeding, would be lost from the Bullion Road allotment under the Proposed Action. Since improvements 4192 and 4184 were found not to exist during field visits, there would be no affect to these under the Proposed Action.

No Action Alternative

Under the No Action alternative, the permittee would continue grazing according to their permit. Water sources for the cattle would continue to be uncertain within the allotment. Natural events such as weather and wildfire could continue to affect grazing within the allotment.

3.10.2 Livestock and Grazing

The cumulative effects study area (CESA) for livestock and grazing is the Bullion Road Allotment. The sale of the lands considered for acquisition would result in a loss of approximately 78 active preference AUMs from Mr. Eugene Buzzetti's grazing permit for the current permittee in the Bullion Road Allotment. Development of private lands within the Bullion Road allotment could mean that more lands will be fenced off from grazing, though fencing of private lands would not result in a loss of permitted AUMs.

Wildfires also have the potential to further affect grazing within the CESA through the destruction of vegetation, alteration of the existing plant communities, and the required removal of cattle from BLM-administered lands for a number of years to allow the vegetation to recover. Mr. Buzzetti has been restricted from grazing within the Bullion Road allotment for the past two years due to wildfires.

3.11 NATIVE AMERICAN RELIGIOUS CONCERNS

In accordance with the National Historic Preservation Act (P.L. 89-665), NEPA, Federal Land Policy and Management Act, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, and Executive Order 13007, the BLM must provide affected tribes an opportunity to comment and consult on the proposed Project. BLM must complete a good faith effort to identify locations having traditional, cultural, or spiritual importance and limit, reduce, or possibly eliminate any negative impacts to identified traditional, cultural, spiritual sites, activities, and resources.

Letters informing tribal governments about the project and requesting their input were mailed on February 9, 2009 (to Elko Band Council), May 1, 2009 (to Temoke Tribal Council, South Fork Band, and Elko Band Council), and on June 8, 2009 (to Elko Band Council, Temoke Tribal Council, and South Fork Band Council). No responses to these letters were received.

3.11.1 Effects of the Alternatives

Proposed Action

Letters informing the identified tribes of the Proposed Action were sent out by the BLM as described above. No letters of response were received indicating that there are no locations of traditional, cultural, or spiritual importance which would be affected by the Proposed Action.

No Action Alternative

Impacts relating to Native American religious concerns would not occur under the No Action alternative.

3.11.2 Cumulative Impacts

Impacts to Native American religious concerns from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.12 NON-NATIVE INVASIVE SPECIES

Bull thistle (*Cirsium vulgare*) and an extensive infestation of perennial pepperweed (*Lepidium latifolium* L.) are located around and up gradient of the 5C Pumpback Pond and within the existing Reuse Site. Bullthistle can also be found in Parcels A, C, and D and perennial pepperweed can be found in Parcel A. Several non-native, invasive species can be found on the upland sites including Russian thistle (*Salsola sp.*) and halogeton (*Halogeton glomeratus*).

The City is currently managing the existing non-native and invasive species using approved chemical treatments. Burning has been used in the past for weed control within the center pivots.

3.12.1 Effects of the Alternatives

Proposed Action

The proposed disturbance has the potential to create conditions favorable for the establishment of invasive, non-native weeds, and other undesirable species. The use of suitable seed mixes with only certified noxious weed-free seed, combined with implementation of prompt and appropriate revegetation techniques, would reduce the potential for invasive, non-native weed invasion. For the proposed disturbances, the City would actively treat noxious weeds, which would also prevent those weed species from spreading and dominating the site. The City would continue to actively control the non-native and invasive species that exist on the current Reuse Site. Most of the Project Area would be fenced off as discussed in Section 2.2.2.3 to prohibit human entrance and thus reduce the spread of noxious weed seeds via human- and livestock-caused means.

No Action Alternative

Impacts relating to non-native and invasive species would not occur under the No Action alternative. The City would continue to control the non-native and invasive species that exist on the Reuse Site.

3.12.2 Cumulative Impacts

The CESA for non-native and invasive species is the Bullion Road allotment. Developments and associated land clearing activities could result in the spread of opportunistic non-native and invasive species. Movement of people and equipment through the CESA can further the spread of these species. Non-native and invasive species often revegetate areas after wildfires especially when seeding is not carried out or is not successful.

3.13 SOCIOECONOMICS

The 2000 population of Elko County was 45,291 with a median age of 31.2 years and a workforce of 24,209. About 3.9 percent of the workers over the age of 16 are unemployed (Bureau of Labor Statistics, 2009). The median annual income in Elko County per job in 2005 was $37,745 (Fedstats, 2009).

3.13.1 Effects of the Alternatives

Proposed Action

The Proposed Action would provide employment for engineering companies regarding the design work of the proposed facilities, drill crews for associated geotechnical investigations, and construction crews for the construction of the proposed facilities including earth works, fencing, electrical power supplies, pipelines, roads, monitoring wells and a fecal monitoring station. Work opportunities related to the Proposed Action would vary by the phase of development and the eventual long term development needs. The developments could occur progressively for up to 20 years. Work opportunities related to the developments of the Proposed Action would contribute to the continued employment and economic stability of Elko County.

No Action Alternative

Under the No Action alternative employment opportunities for technical and construction-related companies would not occur.

3.13.2 Cumulative Impacts

Impacts on socioeconomics from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.14 SOILS

The Project Area is located on the Hunnton-Wieland-Gance association (480), the Devilsgate-Woofus-Devilsgate gravelly substratum association (440), the Linkup-Roca-Vanwyper association (261), the Enko-Rad association (226), and the Moranch-Ocala-Orovada association (110). The soil association locations are illustrated on Figure 9.

The Hunnton-Wieland-Gance association is located on fan piedmont remnants at elevations between 5,000 and 6,000 feet amsl. The soils in this association are from parent materials of mixed alluvium influenced by loess and volcanic ash. The Hunnton soil is found on smooth summits of fan piedmont remnants with slopes of two to four percent. Wieland soils are found on the smooth side slopes of fan piedmont remnants with slopes ranging from four to six percent. The Gance soil is located on the convex side slopes of fan piedmont remnants with slopes of 15 to 30 percent. The soils in this association are generally comprised of gravelly loams, gravelly sands, gravelly clays, clays, and loams. A hardpan layer is found in the Hunnton soil at a depth of 28 to 42 inches and the depth to bedrock is greater than 60 inches for all soils in this association (NRCS, 1997).

The Devilsgate-Woofus-Devilsgate gravelly substratum association is located in the north-western corner of Parcel E as shown on Figure 9. This association is located on basin floors

between 5,000 and 5,400 feet amsl. The soils in this association are from parent materials of mixed alluvium influenced by loess and volcanic ash. The Devilsgate soil is found on flood plains with slopes of zero to two percent. The Woofus soil is found on natural levees in flood plain with slopes of zero to two percent. The Devilsgate soil, gravelly substratum is found on flood plains with slopes of zero to two percent. The soils in this association are generally comprised of stratified loamy fine sand, loams, and clays with a depth to bedrock greater than 60 inches. The soils in this association have low potentials for erosion by wind and water (NRCS, 1997).

The Linkup-Roca-Vanwyper association is located on mountains at elevations between 6,000 and 7,000 feet amsl. It is located within a very small part of the Project Area on the south side, as mapped by NRCS and shown on Figure 9. The soils in this association have parent materials of residuum and colluvium derived from andesite, sandstone, and conglomerate. The Linkup soil is found on crests and side slopes of mountains with slopes between 15 and 30 percent. The Roca soil is found on concave, north-facing side slopes with slopes of 15 to 30 percent. The Vanwyper soil is found on smooth, south-facing slopes with slopes between 15 and 30 percent. The soils in this association are generally comprised of cobbly clays and loams, gravelly clays, and gravelly loams with depths to bedrock between 14 and 40 inches. The soils in this association have low potentials for erosion by wind and water (NRCS, 1997).

The Enko-Rad association is located on fan piedmont remnants and inset fans in elevations ranging from 5,100 to 5,800 feet amsl. The Enko soil is from parent material of mixed alluvium influenced by loess and volcanic ash and is located on fan piedmont remnant summits on slopes of two to eight percent. The Rad soil is from parent material of loess over mixed alluvium. It is found on inset fans with slopes of two to four percent. The soils in this association are generally sandy and silty loams with depths to bedrock greater than 60 inches and have low potentials for erosion by wind and water (NRCS, 1997).

The Moranch-Ocala-Orovada association is found on fan skirts in elevations between 4,900 to 5,300 feet amsl. The soils in this association are from parent materials of mixed alluvium influenced by loess and volcanic ash. The Morancha soil is located on the upper part of fan skirts with slopes between zero and two percent. The Ocala soil is located on the lower fan skirts on slopes between zero and two percent. The Orovada soil is found on upper parts of fan skirts and adjacent to toe slopes of fan piedmont remnants. The soils in this association are primarily comprised of sandy and silty loams with a depth to bedrock greater than 60 inches and have low potentials for erosion by wind and water (NRCS, 1997).

3.14.1 Effects of the Alternatives

Proposed Action

Existing soils would be disturbed and removed during the development of the proposed facilities. The primary mechanism for soil loss would be from wind erosion and would likely increase when vegetation is removed and when soils are stockpiled. During stockpiling, the soils would be mixed and the biological crusts buried. A loss of vegetation would cause a decrease in the biological activity of the soils and altered chemical characteristics. Water erosion would potentially occur on disturbed soils during periods of heavy rain or snowmelt due to the loss of vegetative cover and its stabilization properties. Compaction and pulverization of the soils would

potentially occur in areas of development, resulting in decreased permeability, water holding capacity, and loss of soil structure.

The exclusion of cattle from the Project Area would eliminate soil impacts related to grazing such as compaction, erosion, pulverization, and preferential vegetation loss.

The disturbances under the Proposed Action would be both temporary and permanent. The City would use erosion and sediment control BMPs as outlined in the City of Elko Construction Site Best Management Practices Handbook (Kennedy/Jenks Consultants, 2005) and described in Section 2.2.3.5 and 2.2.3.7. Areas which need not remain cleared of vegetation may be reseeded to promote soil stabilization. Growth media would be stockpiled as described in Section 2.2.3.10 and placed prior to seeding as needed.

No Action Alternative

Under the No Action alternative, there would be no further impacts to soils beyond the impacts of previously authorized and unauthorized activities including the operation of the existing Reuse Site, cattle grazing, precipitation, wind, wildfires, and human impacts related to off-road travel via unauthorized dirt roads.

3.14.2 Cumulative Impacts

The CESA for soils is the Bullion Road allotment. Soils would potentially be affected by the developments associated with the Proposed Action and with other developments which might occur on privately owned or BLM-administered within the allotment.

Soil loss due to wind and water erosion would increase after the removal of vegetation. Soil could also be compacted and pulverized, decreasing permeability, the water holding capacity of the soil, and a loss of soil structure.

3.15 SPECIAL STATUS SPECIES

A number of federal and state threatened, endangered, and special status species occur throughout northern Nevada. Any action that could affect a federally listed species is subject to consultation with the United States Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act (ESA) of 1973. For special status species (e.g., candidate, and/or species of concern), BLM policy (6840.02 B) is to not authorize actions that could adversely affect their populations and thus contribute to listing any of these species under provisions of the ESA.

Federally threatened or endangered species are any species that the USFWS has listed as an endangered or threatened species under the Endangered Species Act throughout all or a significant portion of its range.

Proposed threatened or endangered species are any species that the USFWS has proposed for listing as a federally endangered or threatened species under the Endangered Species Act.

Candidate species are plant and animal taxa that are under consideration for possible listing as threatened or endangered under the Endangered Species Act.

BLM sensitive species are **s**pecies: 1) that are currently under status review by the USFWS, 2) whose numbers are declining so rapidly that federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refuge or other specialized or unique habitats. The BLM's Special Status Species Policy states that "the BLM shall implement management plans that conserve candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by BLM do not contribute to the need for the species to become listed". The policy also states that "the protection provided by the policy for candidate species shall be used as the minimum level of protection for BLM sensitive species" (BLM, 2001).

The Nevada Natural Heritage Program (NNHP) program query identified the absence of sensitive plant species within the general vicinity. The BLM provided a list of special status species with the potential to occur in the area which included the burrowing owl (*Athene cunicularia*), pygmy rabbit (*Brachylagus idahoensis*), Nevada viceroy (*Limenitis archippus lahontani*), and the Columbia spotted frog (*Rana pretiosa)* (Great Basin Ecology, Inc., 2008).

In September of 2008 a field survey was conducted utilizing meandering pedestrian transects with an increased intensity within areas known to be suitable for the aforementioned special status species. Only the parcels proposed for acquisition by the City were surveyed.

Pygmy Rabbits

The Project Area provides potential pygmy rabbit habitat. Pygmy rabbits are found in various vegetation types in areas of deep, loose soils suitable for creating their burrow systems. Pygmy rabbit observations in Nevada have been made within areas characterized by mountain, basin, and Wyoming big sagebrush types, and within the big sagebrush-bitterbrush vegetation type.

The field survey found the potential for pygmy rabbits limited to the drainages and where big sagebrush is present. Areas of tall sagebrush were surveyed extensively for sign of pygmy rabbits. Possible old pygmy rabbit burrows were found in Parcel C. Pygmy rabbit droppings were observed, as well as several other burrows. However, the presence of spider webs across the entry ways and lack of fresh droppings indicate that the burrows were inactive (Great Basin Ecology, Inc., 2008).

Burrowing Owls

The Project Area provides potential burrowing owl habitat. Burrowing owls utilize abandoned mammal burrows, such as those created by badgers, for nesting habitat. This species tends to use disturbed or open sites with minimal vegetation for nesting and loafing, such as recent burned areas or areas near troughs, corrals, or livestock mineral licks where open terrain exists. This tendency may be due to the lack of vegetation at these sites that allows increased visibility from the burrow entrance.

The field survey found that burrowing owl habitat is marginal within the proposed area. No burrowing owls or large burrows were observed during the field survey (Great Basin Ecology, Inc., 2008).

Nevada Viceroy

The Project Area provides potential habitat for the Nevada viceroy. The Nevada viceroy habitat is riparian with willows. The larvae feed mainly on the leaves of willows and perhaps aspen and

cottonwood. The adults are not dependent on willows. Only a small population of willows occurs around the 5C Pumpback Pond. No Nevada viceroys were observed during the field survey (Great Basin Ecology, Inc., 2008).

Columbia Spotted Frog

The Columbia spotted frog generally inhabits cold, permanent waters such as streams, rivers, marshes, springs, pools, and small lakes. The Columbia spotted frog does not occur in warm stagnant ponds with extensive cattail growth such as the 5C Pumpback Pond. The Project Area does not provide potential habitat for the Nevada viceroy. No Columbia spotted frogs were observed during the field survey (Great Basin Ecology, Inc., 2008).

Sage Grouse

The Project Area provides potential habitat for the sage grouse. The parcels proposed for acquisition are located adjacent to but not within sage grouse summer range as shown in Figure 10. The westernmost portion of the Project Area, land already administered by the City, is located within summer sage grouse range. Elko County has some of the largest sage-grouse populations within Nevada (NDOW, 2007). The Project Area is located within the South Fork Population Management unit (PMU) which encompasses approximately 1,370,000 acres of land. Of this acreage, only approximately 360,000 acres are considered to be "intact" sage grouse habitat (Northern Nevada Stewardship Group, 2004).

In 2004, the South Fork PMU was estimated to have a sage grouse population of between 3,400 and 4,100 individuals (NDOW, 2009A). Lek data indicate sage-grouse populations are still widely distributed throughout eastern Nevada in spite of recent wildfires and development. Vast areas of burned habitat may have fragmented some sage-grouse populations. Most of them still have adjacent grouse populations that will be able to colonize back into these burns if they recover over the next 15 to 25 years. Additional uncontrolled wildfires in the future could exacerbate the habitat fragmentation problem and threaten the future of sage-grouse in significant portions of Elko County. Trend lek counts are down over the long-term (20 years). Strutting ground and harvest data indicate base populations of sage-grouse are low to moderate in the eastern Nevada region as compared to the late 1970's and early 1980's (NDOW, 2009B).

3.15.1 Effects of the Alternatives

Proposed Action

Burrowing owls, the Nevada viceroy, and the Columbia spotted frog were not found during field surveys. Pygmy rabbit have inhabited the Project Area within Parcel C. However, the pygmy rabbit sign was old suggesting that pygmy rabbits do not currently inhabit the surveyed area. Potential habitats for the burrowing owl, pygmy rabbit, and the Nevada viceroy occur within the Project Area.

Land acquisition under the Proposed Action would result in the loss of approximately 808 acres of potential special status species habitat from BLM management to City management. Development under the Proposed Action would potentially result in the loss of sagebrush and salt desert scrub habitat. Approximately 180 acres would be permanently cleared of vegetation for the construction of RIBs, effluent storage reservoirs, and roads. Resident small nongame mammals and reptiles would potentially be affected by the loss of food and cover, and

disturbance activities have the potential to cause direct mortality. The loss of reptiles and small nongame mammals would, in turn, affect the food supply of larger predatory animals in the area such as the burrowing owl.

To avoid potential impacts to nesting birds, the City would not conduct land clearing during the avian breeding season (approximately April 1 through July 31, annually). If land clearance during that time cannot be avoided, precautions would be taken as described in Section 2.2.3.9. Power poles and lines would be fit with deterrent devices to avoid collisions with power lines as described in Section 2.2.3.9.

No disturbances would occur within the riparian areas surrounding and up gradient from the 5C Pumpback Pond; thus, no associated impacts to species such as the Nevada viceroy would occur regarding their utilization of these areas.

The creation of water bodies would not likely benefit either the Nevada viceroy or the Columbia spotted frog. The Nevada viceroy is dependent on willow as the larval host species. No willow would be allowed to grow in the proposed RIBs due to required maintenance. The Columbia spotted frog usually occurs in cooler, more permanent waters with vegetation rather than stagnant waters as will be created by the proposed RIBs.

The land acquisition portion of the Proposed Action would not affect land within the sage grouse range. However, a portion of the Project Area, approximately 40 acres, would be located within the sage grouse summer range. Under the Proposed Action, a pipeline would be developed in this area, resulting in the loss of approximately 0.5 acres of intact sage grouse habitat from the approximately 360,000 acres of intact sage grouse habitat within the South Fork PMU. This loss is equivalent to less than 0.0001 percent of the intact sage grouse habitat within the South Fork PMU; therefore, the effects of the Proposed Action to sage grouse and sage grouse habitat would be negligible.

No Action Alternative

Under the No Action alternative, the proposed developments would not occur. Therefore, there would be no impacts to the aforementioned special status species.

3.15.2 Cumulative Impacts

The CESA for special status species is Hunting Unit 65 which encompasses approximately 631,300 acres of land. Of this land, approximately 349,700 acres are currently administered by the BLM.

Developments associated with the Proposed Action and reasonably foreseeable developments could result in both direct and indirect impacts to special status species and their habitats resulting in the loss of individuals. Fire could also result in the direct or indirect loss of sensitive wildlife species. Much of this area has burned in previous years resulting in the loss of special status species habitat, particularly sage grouse. These impacts would be inconsequential in relationship to the size of the CESA.

3.16 VISUAL RESOURCES

Visual resources are identified through the Visual Resource Management (VRM) inventory. This inventory consists of a scenic evaluation, sensitivity level analysis, and delineation of distance zones. Based on these factors, BLM-administered lands are placed into four visual resource inventory classes: VRM Classes I, II, III, and IV. Classes I and II are the most valued, Class III represents a moderate value, and Class IV is of the least value. VRM classes serve two purposes: 1) as an inventory tool that portrays the relative value of visual resources in the area; and 2) as a management tool that provides an objective for managing visual resources.

The Project Area is located under Class IV VRM lands. The Class IV VRM objective is to allow for management activities which involve major modifications of the existing character of the landscape. The level of contrast can be high, dominating the landscape and focus of the viewer's attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbances, and repeating the basic elements of the characteristic landscape.

Part of the Project Area is located within the I-80 Low Visibility Corridor as shown on Figure 11. The I-80 Low Visibility Corridor was designated as a low visibility corridor in the Elko and Wells Resource Management Plans in order to minimize visual impacts within 1.5 miles on either side of the highway. Within this three-mile wide Low Visibility Corridor, the objective for visual resources is for management actions not to be evident in the characteristic landscape.

In the low visibility corridor guidance recommends that management activities may be seen but should not attract the attention of the casual observer, i.e. a casual observer would be anyone traveling along I-80. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The existing Reuse Site is located on City-owned land. Currently eight RIBs, two effluent storage reservoirs, one distribution pond, roads, and overhead power lines are located on this property. Dam 5C and the 5C Pumpback Pond are located on BLM-administered land as shown on Figure 11. The characteristic landscape is relatively flat to gently sloping. The vegetation is predominately sagebrush and salt scrub with some riparian vegetation located up gradient of Dam 5C. The vegetation colors are predominately dusty greens and browns, and the soils colors range from grey to light tan. Both natural and manmade linear features dominate the landscape, from the linear topographic features to the linear lines created by bladed roads, berms, dams, and ponded water.

3.16.1 Effects of the Alternatives

Proposed Action

Most of the proposed developments would occur south and outside of the I-80 Low Visibility Corridor as shown on Figure 11. Developments planned within this management corridor include a new access road, fences, a fecal monitoring station, and monitoring wells. Visual resource BMPs as described in Section 2.2.3.11 would be followed to minimize visual impacts and minimize the visibility of the developments to the casual observer.

Proposed developments located outside of the I-80 Low Visibility Corridor would be more noticeable to the casual observer as they would include the construction of dammed ponds and

lined effluent storage reservoirs. The proposed developments would very similar to the developments which currently exist. Visual resource BMPs would be followed to minimize the effects which would include establishing Key Observation Points (KOPs) in coordination with the BLM to complete contrast rating forms.

No Action Alternative

Under the No Action alternative, impacts related to visual resources would not occur beyond impacts related to previously authorized activities. Sections of the existing Reuse Site are located within the I-80 Low Visibility Corridor as are adjacent private lands which have been prepared for development as shown on Figure 11. No developments within the existing Reuse Site are planned under the No Action alternative.

3.16.2 Cumulative Impacts

Impacts on visual resources from the Proposed Action would be negligible. Therefore, no cumulative impacts would occur.

3.17 WASTES

Prior to transfer of land ownership, the BLM requires a land transfer audit be conducted to determine if the lands in question pose a significant risk to human health and the environment at the time of the land transaction. Further, an environmental site assessment must be prepared in accordance with section 120 (h) of the Superfund Amendments and Reauthorization Act, and be completed to determine if hazardous substances were stored for one year or more, disposed of, or released on the property. The Phase II environmental site assessment revealed the following events as pre-existing environmental conditions connected with the parcels considered for acquisition: release of treated effluent on May 7, 2004, release of treated effluent in April of 2005, and the release of 70 pounds of elemental mercury in October of 2008. The site assessment also identified 14 sites where illegal dumping has occurred. The BLM land transfer audit and Phase II environmental site assessment concluded that the parcels considered for acquisition do not present a significant threat to human health and the environment at the time of inquiry (BLM, 2009).

3.17.1 Effects of the Alternatives

Proposed Action

Pursuant to 43 CFR 2743.2-1 the City must comply with all Federal and State laws applicable to the disposal, placement, or release of hazardous substances.

Pursuant to 43 CFR 2743.2-1, once patented, no portion of the land used for solid waste disposal or hazardous waste disposal as determined by the authorized officer, would revert back to the United States.

The City would handle other solid and hazardous wastes and hazardous materials associated with the construction and operation of the facilities in accordance with state and federal regulations. Both the NDEP and BLM would be notified of spills and completion of cleanup. The City would dispose of solid waste at a permitted facility.

The City would remove trash and debris from existing illegal dump sites as deemed necessary by the City for the development of the Project. Installation of fencing as described in section 2.2.2.3 would inhibit illegal dumping within fenced areas.

No Action Alternative

Under the No Action alternative existing conditions related to wastes would continue. The wastes reported to be found within the Project Area would not be removed or altered by the City, and there would be no waste creation due to the construction or operation of the proposed facilities. Wastes related to the operation and maintenance of the existing permitted facilities would continue.

3.17.2 Cumulative Impacts

The CESA for hazardous and solid wastes is the Bullion Road Allotment. Being located within a few miles of the City, it is reasonable to assume that dumping of solid and other wastes will continue to occur within the CESA. As developments occur within private lands within the allotment, there could be an increase in the amount of wastes illegally dumped on the land as there will be more people frequenting the area.

3.18 WATER QUALITY, SURFACE AND GROUND

The Project Area is located in the Elko Segment hydrographic sub-basin (49). The sub-basin has an annual yield in combination with Mary's Creek Area (52) of 13,000 acre-feet (NDWR, 2006). The approximate annual usages are listed in Table 10.

Table 10: Active Annual Water Usages in the Elko Segment Hydrographic Sub-basin

Manner of Use	Active Annual Use (acre feet)
Commercial	4,317
Domestic	195
Environmental	40
Industrial	1,469
Irrigation	916
Mining and Milling	55
Municipal	18,000
Quasi-Municipal	882
Recreational	45
Stockwatering	205
Other	1

Source: NDWR, 2006

Surface Water

No natural surface water resources occur within the Project Area. The nearest natural surface water feature is the Humboldt River which is subject to Class A water quality standards outlined in the NAC 445A. Nevada's 2004 303(d) Impaired Water Bodies List shows the Humboldt River between Osino and Palisades as having exceeded levels for total iron, total phosphorous, turbidity, and dissolved zinc.

Storm water would generally flow from the Project Area northwest in intermittent drainages, following the topographic gradient toward the Humboldt River. A diversion swale was constructed in 2007 on the east side of the existing Reuse Site as shown on Figure 4, to divert up gradient water around the Reuse Site.

Eight constructed RIBs and one distribution pond are located within the existing Reuse Site as shown on Figure 2. The water in these ponds is treated effluent piped from the City's WRF. The RIBs are used for disposing of treated effluent through infiltration. They also provide a large surface area open to the atmosphere for evaporation of treated effluent. The RIBs are operated from approximately October to June of each year. In the fall, the RIB floors are scarified and ripped to break up the hardpan and expose material with good infiltration potential. Sediment removal from the individual RIBs is conducted on an as needed basis during this inactive period. The percolation performance for the RIBs is generally from one to four inches per day with some RIBs performing better than others. There is no predefined time over which each RIB is allowed to infiltrate, but maintenance activities must occur when a RIB is dry. The RIBs are typically allowed to dry during the summer months when treated effluent is diverted to the effluent storage reservoirs and other permitted reuse outfalls (Knight Piésold and Co., 2007b).

Discharge to the RIBs is limited to the conditions of NDEP BWPC discharge permit NEV20014. Discharge permit NEV20014 expired on January 14, 2004. The City had applied for a permit renewal within the timeframe required by the NDEP. A new permit has not yet been issued by the NDEP as modifications are still pending. Until a new permit is issued, the City continues to follow the stipulations of the expired permit as requested by the NDEP (Hartley, J., 2009). Under the discharge permit, the City is required to monitor the effluent's carbonaceous biological oxygen demand (CBOD), biological oxygen demand (BOD), total suspended solids, and pH on a weekly basis and total phosphorous on a monthly basis.

Other permitted outfalls for the WRF treated effluent are: the Ruby View Golf Course, Elko County Fairgrounds, Elko Land Application sites (pivots within the Reuse Site), surface leach field test plots (within the Reuse Site), property surrounding the effluent storage reservoirs (within the reuse Site), the Elko Municipal Landfill, the Elko Municipal Airport, construction site reuse, and the Bruce Miller Ranch. A letter from the City to the NDEP from 2007 requests that the surface leach field test plots (within the Reuse Site), property surrounding the effluent storage reservoirs (within the Reuse Site), and the Elko Municipal Landfill be omitted from the permit. The City has not discharged to these outfalls. The permit modifications are pending.

The following outfalls currently under use are the Ruby View Golf Course, the Elko County Fairgrounds, construction use, and the Bruce Miller Ranch. Discharge to these outfall sites is limited to the conditions of discharge permit NEV20014. The permit requires that the effluent be monitored monthly during the irrigation season or during applicable reuse activities for total nitrogen, total Kjeldahl nitrogen, nitrate, nitrite, and ammonia. The effluent must also be monitored twice per week during the irrigation season or during applicable reuse activities for fecal coliform.

The aforementioned outfall sites are also limited to conditions stipulated under individual discharge permits for each site. Ruby View Golf Course is currently operating under discharge permit NEV2003515, the Elko County Fairgrounds are operating under discharge permit TNEV2004340, and Bruce Miller Ranch is operating under discharge permit NEV99006. The locations of the outfalls currently being utilized are shown on Figure 3.

The City is required to submit quarterly and annual discharge monitoring reports. A review of official correspondence between the City and the NDEP shows that the City is currently in compliance with the stipulations outlined in discharge permit NEV20014, including the general condition that no discharge of substances cause an exceedance of drinking water standards in the groundwater. Per conversations with the NDEP, compliance with the permit can be investigated through the existence or lack of letters of non-compliance (Hartley, J., 2009). The most recent correspondence between the City and the NDEP concerning operational or other problems was from 1997, regarding the City's frequent use of the emergency storage ponds located above Dam 5C.

One pond is located up gradient from Dam 5C as shown in Figure 4. Dam 5C was constructed in 1991 to capture seepage coming from RIBs located to the east, creating the 5C Pumpback Pond with a surface area of approximately 3 acres. The pond water is pumped back into the RIB distribution system. A small pond is located up gradient from Dam 5A with a surface area of approximately 0.4 acre. This pond dries periodically.

There are two lined effluent storage reservoirs located adjacent to the existing Reuse Site as shown on Figure 4. These ponds are used for storage throughout the year and are able to supply and receive treated effluent to the reuse system.

Groundwater

The geologic formations comprising the Project Area can be seen in Figure 9. A majority of the Project Area is located within the Tertiary Hay Ranch Formation which consists of clays, silts, sands, and boulders of a variety of lithologies. The clays and silts often form lenses. The northern border of Parcel A includes the Quaternary Humboldt River Flood Plain Alluvium, which consists of well rounded cobbles and gravels with sands and silts of mixed lithologies. The Mississippian and Pennsylvanian Diamond Peak Formation is located along the southern border of Parcel C. The Diamond Peak Formation is a coarse clastic unit containing siltstones, shale, and limestone, often as a matrix supported conglomerate (Coats, 1978).

The flow of groundwater is generally northeast, following the topographic gradient. Where lenses of clays and silts occurs, there is the potential for flows to become locally perched, following the localized gradient of that layer.

The depth to groundwater from monitoring wells L1, L3, L4, L8, 007-1, 007-2, and 007-3 (Figure 4) is shown in Table 11, as reported in the City's quarterly groundwater monitoring well report.

Table 11: Depth to Water from Reuse Site Monitoring Wells

Well	Groundwater Elevation (amsl)[1]
L1	5,058.9
L3	>5,106.0
L4	>5,147.0
L8	5,179.3
007-1	5,060.8
007-2	5,048.9
007-3	5,065.7

[1]Data is from the first quarter of 2008

Discharge permit NEV20014 requires quarterly groundwater monitoring from Reuse Site monitoring wells L1, L3, L4, L8, 007-1, 007-2, and 007-3. Discharge permit NEV20014 requires the monitoring wells be sampled quarterly for nitrates, total nitrogen, total Kjeldahl nitrogen, nitrite, chlorides, and total dissolved solids. Groundwater monitoring wells G2 and G4 have been requested for removal from permit NEV20014 as they are currently covered under permit NEV2003515

Discharge permit NEV20014 stipulates that if the results for nitrate concentrations in the monitoring wells increases to 7.0 mg/L, the City would investigate and select alternate methods of operation or disposal to reduce the nitrate concentration. If nitrate levels increase to 9.0 mg/L the approved alternatives would be enacted. If nitrate levels increase to 10.0 mg/L the discharge to groundwater would cease.

According to the NDWR well log data, 13 wells are located down gradient of the Project Area, excluding the previously listed monitoring wells. The 13 wells, listed in Table 12, are labeled for use as domestic drinking water wells.

Table 12: Water Wells Down Gradient of the Project Area

Log Number	Township	Range	Section	Quarter Section	Total Depth	Static Water Level	Proposed Use
68350	N34	E55	31	SE NE	180	65	Domestic
68352	N34	E55	31	NE NE	100	12	Domestic
68353	N34	E55	31	NE NE	100	27	Domestic
70925	N34	E55	31	SE SE	172	100	Domestic
43623	N34	E55	31	SE NE	140	40	Domestic
48440	N34	E55	31	SE NE	120	45	Domestic
24957	N34	E55	31	SW NE	99	34	Domestic
78521	N34	E55	31	SW SW	165	83	Domestic
85026	N34	E55	31	NE NE	124	34	Domestic
85027	N34	E55	31	SW SE	180	100	Domestic
107027	N34	E55	31	SW SE	170	52	Domestic
107124	N34	E55	31	NE NE	130	17	Domestic
42835	N34	E55	31	NE NE	140	30	Domestic

Data Source: NDWR, 2009

Effluent Production

In 1995 the per capita generation of wastewater flow from the City to the WRF was approximately 150 gallons per day. This amount increased to approximately 170 gallons per day in 2006. The City population has also increased from approximately 10,000 in 1986 to approximately 18,000 in 2006. These increasing trends in both population and per capita effluent generation suggest an increasing trend in the amount of effluent being produced by the City population as a whole and a resulting increase in the amount of treated effluent coming from the City WRF which requires management (Knight Piésold, 2008).

3.18.1 Effects of the Alternatives

Proposed Action

Per capita effluent production and population growth trends suggest there will be a continued increase in wastewater produced by the City population and thus an increase in treated effluent which will require management by the City. The City's current management options as stipulated in discharge permit NEV20014 include reuse at permitted sites, including evaporation and infiltration through the existing Reuse Site RIBs and storage in the existing effluent storage reservoirs.

An increase in treated effluent applied to the existing and proposed RIBs at the Reuse Site could result in a greater influx of treated effluent into the groundwater and potential impacts to hydraulically down gradient groundwater resources including drinking water wells as shown on Figure 4 and the Humboldt River. An increase in treated effluent applied to the RIBs could potentially exceed the design capacity, resulting in the potential for seepage and surface expressions of treated effluent down gradient of the RIBs.

Under the Proposed Action the City would acquire the required permit modifications from the NDEP to include the proposed RIBs and effluent storage reservoirs as part of their Effluent Management Plan (EMP). The EMP would require NDEP approval prior to permitting, and the required permit modifications would be obtained prior to construction. The permit modifications would stipulate discharge limitations, requirements for effluent and groundwater monitoring, reporting, and facility operations. General conditions under a permit modification would continue to require that there be no discharge which would cause an exceedence of drinking water standards in the groundwater.

Under the Proposed Action up to 15 new RIBs would be constructed within the Project Area. The new RIBs would provide greater infiltration and evaporation capacity for the City to utilize in the management of treated effluent. The two proposed effluent storage reservoirs would also be constructed under the Proposed Action, increasing the City's holding capacity of treated effluent for reuse through irrigation as permitted in discharge permit NEV99006 and for the general management of the effluent reuse system. An increase in RIBs and effluent storage reservoirs would result in greater management options to optimize the RIBs infiltration capacities individually (i.e. adequate area for wet/dry cycling of the RIBs according to their final design and infiltration capacities) and would increase the overall holding, infiltration, and evaporation capacity of the Reuse Site as a whole. Under the Proposed Action and in accordance with a permit modification, there would also be an increase in the number of groundwater

monitoring wells at the Reuse Site. Ground and surface water resource protection measures would be carried out as described in Section 2.2.3.5.

Construction and the associated land clearing activities associated with the Proposed Action would likely result in an increase in sediment loads to runoff water resulting from snowmelt and storm water. There is no evidence of surface water connectivity between the Project Area and the Humboldt River. Infiltration basins are proposed on the northern edge of Parcel A and the eastern edge of the existing Reuse Site to minimize the potential movement of sediment off of the Project Area. The City would develop a SWPPP and would use erosion and sediment control BMPs as discussed in Section 2.2.3.5.

No Action Alternative

As under the Proposed Action alternative, the per capita effluent production and population growth trends suggest a continued increase in wastewater produced by the City population, and thus an increase in treated effluent requiring management by the City. The City's current management options as stipulated in discharge permit NEV20014 include reuse at permitted sites, including evaporation and infiltration through the existing Reuse Site RIBs and storage in the existing effluent storage reservoirs.

An increase in treated effluent applied to the existing RIBs at the Reuse Site could potentially result in a greater influx of treated effluent into the groundwater and potential impacts to hydraulically down gradient groundwater resources including drinking water wells as shown on Figure 4 and the Humboldt River. There could also be the potential for the application of treated effluent to the RIBs to exceed the design capacity, increasing the potential for seepage and surface expressions of treated effluent down gradient of the RIBs.

Under the No Action alternative, the City would continue to utilize the existing Reuse Site facilities to manage the increasing effluent production. As the production increases, the City's options for management of the treated effluent would decrease as RIB capacities and effluent storage reservoir capacities become increasingly utilized. There would be less time available to rotate the RIBs through their required wet-dry cycles for optimal infiltration capacity maintenance, potentially decreasing the RIB infiltration capacities. If the amount of treated effluent applied to the RIBs exceeds their infiltration capacities then there could be an increase in seepage water surface expressions down gradient from the existing RIBs. There would also be less time available between cycles for RIB and effluent storage reservoir repairs as needs arise.

Under the No Action alternative and assuming an increasing trend in effluent production, the City may exceed their discharge permit limitations for 30-day average and daily maximum discharge amounts in their effort manage the City's treated effluent.

3.18.2 Cumulative Impacts on Water Resources

The CESA for surface and groundwater is the Elko Segment hydrographic sub-basin to the south, east and west, and the Humboldt River to the north. The infiltration of treated effluent could potentially impact the groundwater down gradient of the Project Area. The development of housing units which utilize septic systems could also potentially affect the quality of the groundwater in the area. The development of housing areas within the CESA could increase the number of drinking water wells, which may affect the hydraulic gradient of the area and the potential for drinking water contamination.

3.19 WILDLIFE INCLUDING MIGRATORY BIRDS

Birds

According to the BLM Tuscarora Field Office, over 200 bird species inhabit the Elko district on a seasonal or yearlong basis (BLM, 2005a). Approximately 100 of these bird species utilize sage brush and salt desert scrub habitats, and approximately 80 species utilize lakes and ponds. The Project Area potentially includes seasonal and yearlong habitat for some of these species.

During field surveys within the Project Area several species of duck and blackbirds (*Euphagus cyanocephalus*) were observed in and around the 5C Pumpback Pond. Due to the timing of the survey, no migratory bird species were observed though they would be expected to nest in habitats provided within the Project Area (Great Basin Ecology, Inc., 2008).

Eighteen raptor species are present in the Elko district (BLM, 2005a). The habitats associated with the Project Area are not considered prime nesting habitat for raptors though the open terrain likely provides foraging habitat for a variety of raptors (Great Basin Ecology, Inc., 2008).

Migratory Birds

Executive Order 13186 titled "Responsibilities of Federal Agencies to Protect Migratory Birds" directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act and to conserve migratory birds. The Project Area has the potential to provide migratory bird nesting habitat characterized as sagebrush, salt desert scrub, or wetlands and lakes. Relative to the Executive Order, the 19 species listed in Appendix C are "priority" migratory birds according to the 1999 Nevada Partners in Flight Bird Conservation Plan. Appendices D and E includes a list of all bird species which may occur within the Project Area.

Mammals

According to the BLM Tuscarora Field Office over 70 mammalian species inhabit the Elko District on a seasonal or yearlong basis (BLM, 2005b). Approximately 50 of these mammalian species utilize sagebrush and salt desert scrub habitats. The Project Area potentially includes seasonal and yearlong habitat for some of these species. A list of species which may occur in the Project Area is included in Appendices D and E.

A survey was conducted during September 2008. The observers conducted pedestrian meandering transects. Observed wildlife and sign were noted. Sign of black-tailed jackrabbit (*Lepus californicus*), coyote (*Canus latrans*), and a variety of other small mammals such as mice voles and ground squirrels were observed throughout the Project Area. One black-tailed jackrabbit and one coyote den were observed in Parcel A (Great Basin Ecology, Inc., 2008).

According to NDOW, the Project Area is located wholly within pronghorn antelope (*Antilocapra americana*) range as shown on Figure 12 (NDOW, 2009). Pronghorn antelope populations were analyzed for the hunting unit groups surrounding the Project Area as presented in the NDOW *2007-2008 Big Game Status* report: Southern Elko County, Northern Eureka County (units 065, 142 and 144); Northern Central Elko County (units 061, 062, 064, 071 and 073); and South Central Elko and Western White Pine Counties (units 101-104 and 108). In 2007 most of these unit groups experienced an especially hot and dry season, and were heavily impacted by wildfires. The antelope populations remained generally consistent with previous seasons. In the case of the North Central Elko County unit group, 2007 surveys resulted in a sample size of 592

individuals which was down from a sample size of 938 in 2005 but which is consistent with the 1997-2006 average of 581. The population is also within the carrying capacity of the available winter range within these units (NDOW, 2007-2008).

The Project Area is located within limited mule deer (*Odocoileus hemionus*) habitat. The closest mule deer summer and winter ranges are located to the west of the Project Area as shown on Figure 12 (NDOW, 2009). Statewide mule deer populations have declined in 2008 by approximately five percent as compared to 2007. The mule deer populations were analyzed for the hunting unit groups surrounding the Project Area as presented in the NDOW *2007-2008 Big Game Status* report: Sulphur Springs Range, unit 065; Independence and Tuscarora Ranges, units 061-062, 064 and 066-068; Northeastern Elko County, units 071-099 and 091; and Southern Elko and Northwestern White Pine Counties, units 101-108. The Sulphur Springs Range, Independence and Tuscarora Ranges, and Northeastern Elko County unit group populations have been affected by wildfires, the invasion of non-native invasive species to burned areas, moth infestations, decreased winter range carrying capacities, and droughts resulting in lower population estimates than previous years. The Southern Elko and Northwestern White Pine Counties unit groups, which contain 25 percent of Nevada's mule deer population, have remained isolated from the wildfires and droughts impacting the other areas, and their estimated populations appear to be increasing (NDOW, 2007-2008).

The Project Area is located within potential Rocky Mountain elk range (*Cervus canadensis nelsoni*). Potential elk range occurs throughout Elko County except for within the populated area of Elko and the wetland areas of Ruby Valley (NDOW, 2009). Seasonal use ranges have not yet been established. The 2007 statewide elk population was estimated to be at 9,500 which is one percent higher than the previous season. The elk populations were analyzed for the hunting unit groups surrounding the Project Area as presented in the NDOW *2007-2008 Big Game Status* report: Independence and Tuscarora Ranges, units 062 and 066-068; and the East Humboldt and Ruby Mountains, units 101-103. Estimates from the Independence and Tuscarora units show increases in populations, though some of this increase may be attributed to elk ranging into the area from other units following wildfires. The estimated elk populations of the East Humboldt and Ruby Mountains are very low, with few resident elk remaining in the area (NDOW, 2007-2008).

Reptiles and Amphibians

According to the BLM Tuscarora Field Office over 25 species of amphibians and reptiles inhabit the Elko District on a seasonal or yearlong basis (BLM, 1992). Approximately 20 of these species utilize sagebrush and salt desert scrub habitats. The Project Area potentially includes seasonal and yearlong habitat for some of these species. A list of reptiles which may occur within the Project Area is included in Appendices D and E. No reptiles or amphibians were observed during the field survey (Great Basin Ecology, Inc., 2008).

3.19.1 Effects of the Alternatives

Proposed Action

Land acquisition under the Proposed Action would result in the loss of approximately 808 acres of wildlife and migratory bird habitat from BLM management to City management. The City would manage the land using the resource protection measures described in Section 2.2.3.

Development under the Proposed Action would potentially result in the loss of sagebrush and salt desert shrub habitat. Approximately 180 acres would be permanently cleared of vegetation for the construction of RIBs, effluent storage reservoirs, and roads. This is equivalent to approximately 2.4 percent of the Bullion Road allotment area and less than one percent of Hunting Unit 65.

Resident small nongame mammals and reptiles would potentially be affected by the loss of food and cover, and disturbance activities have the potential to cause direct mortality. The loss of reptiles and small nongame mammals would, in turn, affect the food supply of larger mammals and raptors in the area.

Development would also result in the potential loss of mule deer, antelope, and elk habitat. The area of potential loss is considered to be minor in comparison to the size of the adjacent mule deer, antelope, and elk range areas which remain undeveloped. As shown in Figure 5, most of the Project Area would be fenced using a BLM-approved range fence, allowing for the passage of wildlife. Chain link fences would be installed around the proposed effluent storage reservoirs, inhibiting the passage of larger wildlife. Including the effluent storage reservoir area already enclosed with a chain link fence, approximately 280 acres of the Project Area would be inaccessible to larger wildlife under the Proposed Action.

To avoid potential impacts to nesting migratory and other birds, the City would not conduct land clearing during the avian breeding season (April 1 through July 31, annually). If land clearance during that time cannot be avoided, precautions would be taken as described in Section 2.2.3.9. Power poles and lines would be fit with deterrent devices to avoid perching and nesting of predatory birds and collisions with power lines as described in Section 2.2.3.9.

No disturbances would occur within the riparian areas surrounding and up gradient from the 5C Pumpback Pond; thus, no associated impacts to species would occur regarding their utilization of these areas.

The proposed development includes the creation of up to 15 new RIBs which would be filled with water for part of the year. The existing RIBs are currently utilized by a variety of duck and shore bird species and other animals as a food and water source. Development of the proposed RIBs would provide an increased pond habitat for these species.

Water within the proposed Effluent Storage Reservoirs may attract both aquatic and passerine birds. The City may consider engineered design features within the proposed Effluent Storage Reservoirs that allow for out-of-water resting/loafing areas for aquatic birds or otherwise allow watering areas for passerine birds. These designs may include, but not be limited to, the consideration for textured and “tier-layered” liners, that allow for graduated reservoir banks, and artificial islands. Barring any construction limitations on liners, islands may be created by gravel mounds. The City may consult with wildlife conservation groups such as Ducks Unlimited for potential design features and could otherwise request consultation from agencies such as NDOW. Private wildlife conservation funds could offset the cost of reservoir construction while still allowing for the basic function of the reservoirs.

No Action Alternative

Under the No Action alternative, there would be no impacts to wildlife and migratory birds beyond the impacts related to the operation and maintenance of the existing permitted facilities,

grazing, and public use of lands currently accessible within the Project Area. Impacts to wildlife and migratory birds related to natural events such as precipitation patterns and wildfires would continue to occur.

3.19.2 Cumulative Impacts

The CESA for wildlife and migratory birds is Hunting Unit 65 which encompasses approximately 631,300 acres of land. Of this land, approximately 349,700 acres are currently administered by the BLM.

Developments associated with the Proposed Action and reasonably foreseeable developments could result in both direct and indirect impacts to wildlife and migratory birds and their habitats resulting in the loss of individuals. These impacts would be inconsequential in relationship to the size of the CESA.

Fire could also result in the direct or indirect loss of wildlife and migratory birds. Much of this area has burned in previous years and mule deer populations are scarce.

4 MITIGATION AND MONITORING

No additional mitigation or monitoring measures are suggested as a result of the impact analysis. No mitigation beyond the environmental protection measures proposed is necessary, and appropriate monitoring would be included under the individual permits that the City would be required to obtain as listed in Section 2.2.2.5.

5 CONSULTATION AND COORDINATION

This EA was prepared by a contractor (SRK Consulting (U.S.), Inc.) under the guidance of the BLM and in coordination with other local, state, and federal and tribal personnel; review of City and agency files; field reconnaissance; and review of supporting documentation.

5.1 PERSONS, GROUPS, TRIBES AND AGENCIES CONSULTED

The following persons, groups, and agencies were contacted during the preparation of this EA.

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Janine O. Hartley

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Lorrie West	NEPA Coordination
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6 REFERENCES

BLM. 1987. *Elko Resource Management Plan and Final Environmental Impact Statement: Elko Resource Area.*

BLM. 1992. *BLM Nevada Elko District Reptile and Amphibian List.*

BLM. 2001. *BLM Manual 6840: Special Status Species Management.*

BLM. 2005a. *BLM Nevada Elko District Bird List.*

BLM. 2005b. *BLM Nevada Elko District Mammal List.*

BLM. 2008. *BLM National Environmental Policy Handbook. H-1790-1*

BLM. 2009. Land Transfer Audit and Phase II Environmental Site Assessment.

Bureau of Labor Statistics. 2009. *Labor Force Data by County, 2000 Annual Averages*. Accessed February 11, 2009.

City of Elko. 1971. *Elko City Charter.*

City of Elko. *Master Plan: Population Component*. Accessed October 2008.

Council on Environmental Quality. 1997. *Environmental Justice: Guidance Under the National Environmental Policy Act.* December 1997.

Fedstats. 2009. *Elko County Map Stats*. Accessed February 11, 2009.

Garside, L.J., et al. 1988. *Oil and Gas Developments in Nevada*, Nevada Bureau of Mines and Geology Report 104.

Great Basin Ecology, Inc. 2008. *City of Elko Water Reclamation Facility Recreation and Public Purposes (R&PP) Act: Special Status Species Survey.* September 2008.

Hartley, J. 2009. *Nevada Division of Environmental Protection.* Correspondence with Carrie Schultz (SRK). February 11, 2009.

Kennedy/Jenks Consultants. 2005. *City of Elko Construction Site Best Management Practices Handbook.* December 2005.

Knight Piésold and Co. 2007a. *City of Elko Water Reclamation Facility Reuse Site Expansion Project Field Investigation Summary Report.* Knight Piésold and Co. March 2007.

Knight Piésold and Co. 2007b. *City of Elko Water Reclamation Facility Operations and Maintenance Manual.* Knight Piésold and Co. April 2007.

Knight Piésold and Co. 2008. *City of Elko WRF R&PP Act: Public Land Acquisition – Technical Support.* Memorandum. Knight Piésold and Co. July 2008.

NDOW. 2007-2008. *Nevada Division of Wildlife: 2007-2008 Big Game Status.*

NDOW. 2009A. *Nevada Division of Wildlife Internet Map Service.* Accessed February 6 and September 9, 2009.

NDOW. 2009B. *Nevada Division of Wildlife: 2009 Upland and Migratory Game Bird, Rabbit and Furbearing Mammals.*

NDWR. 2006. Nevada Division of Water Resources (NDWR). *Well Driller's Log – General Report.* Queried February 4, 2009.

NRCS. 1997. Natural Resource Conservation Service. *Soil Survey of Elko County, Nevada, Central Part.* November 1997.

Northern Nevada Stewardship Group. 2004. *Elko County Sagebrush Ecosystem Conservation Strategy.* March 2004.

Tipton, O. 2009. *Elko County.* Correspondence with Carrie Schultz (SRK). March 9, 2009.

U.S. Census Bureau. 2000. *Summary File 3: 2000 Census of Population and Housing.* http://www.census.gov/prod/cen2000/doc/sf3.pdf. July 2000.

U.S. Census Bureau. 2007. Population Finder. *2007 Population Estimates, Census 2000, Census 1990.*

APPENDIX A: LEGAL DESCRIPTION OF LANDS CONSIDERED FOR ACQUISITION

Legal Description of the Lands Considered for Acquisition under the City of Elko Water Reclamation Facility Reuse Site Recreation and Public Purposes Act

Township, Range, Section	Description	Acres
T33N R55E Section 5	Lot 6	9.36
	Lot 7	8.78
	Lot 9	9.45
	Lot 10	8.66
	Lot 11	17.04
	Lot 12	34.43
	Lot 26	4.38
	Lot 27	8.70
	Lot 28	8.08
	Lot 29	7.89
	Lot 30	8.18
	Lot 32	16.67
	Lot 34	4.32
	Lot 43	2.33
T33N R55E Section 6	Lot 16	43.99
	Lot 17	43.78
	Lot 24	21.77
	Lot 26	21.87
T34N R55E Section 29	SE	160.00
	SENE	40.00
	SESW	40.00
	LOT 1	27.23
	LOT 2	33.13
	LOT 3	37.42
	LOT 4	40.04
T34N R55E Section 32	SWNW	40.00
	W2SW	80.00
	NENWNW	10.00
	S2NWNW	20.00
TOTAL ACRES		**807.5**

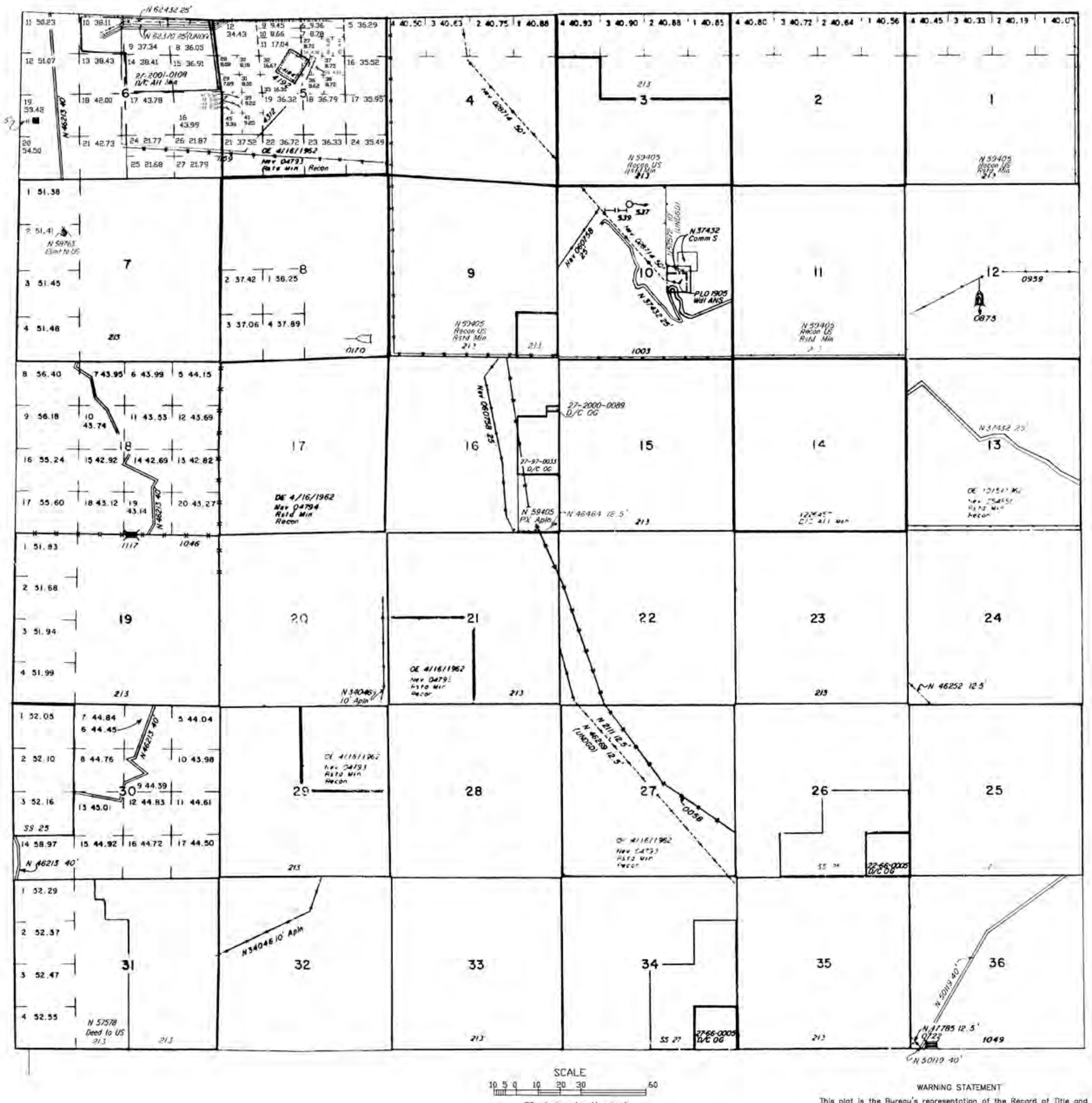
Source: K:_SITES\Elko Water Treatment Plant\108026 WRF Reuse Site R&PP EA\108026 EA\Lands\NVN_87501_ACRES_20091218_CAS.xlsx

TOWNSHIP 33 NORTH RANGE 55 EAST OF THE MOUNT DIABLO MERIDIAN, NEVADA

ELKO COUNTY

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MT PLAT



Lat. 40°42'N
Long. 115°47'E

SCALE

10 5 0 10 20 30 60

30 chains to the inch

WARNING STATEMENT

This plat is the Bureau's representation of the Record of Title and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been been effected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER AND/OR OTHER PUBLIC PURPOSES REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

Nev C5676C Elw & Cl Fl Sec 24

DEPENDENT RESURVEY ACCEPTED 8/21/1985, 9/16/1988

CURRENT TO	BY	CURRENT TO	BY
2/2/07	MS		
12/2/08	MS		
12/15/09	MS		

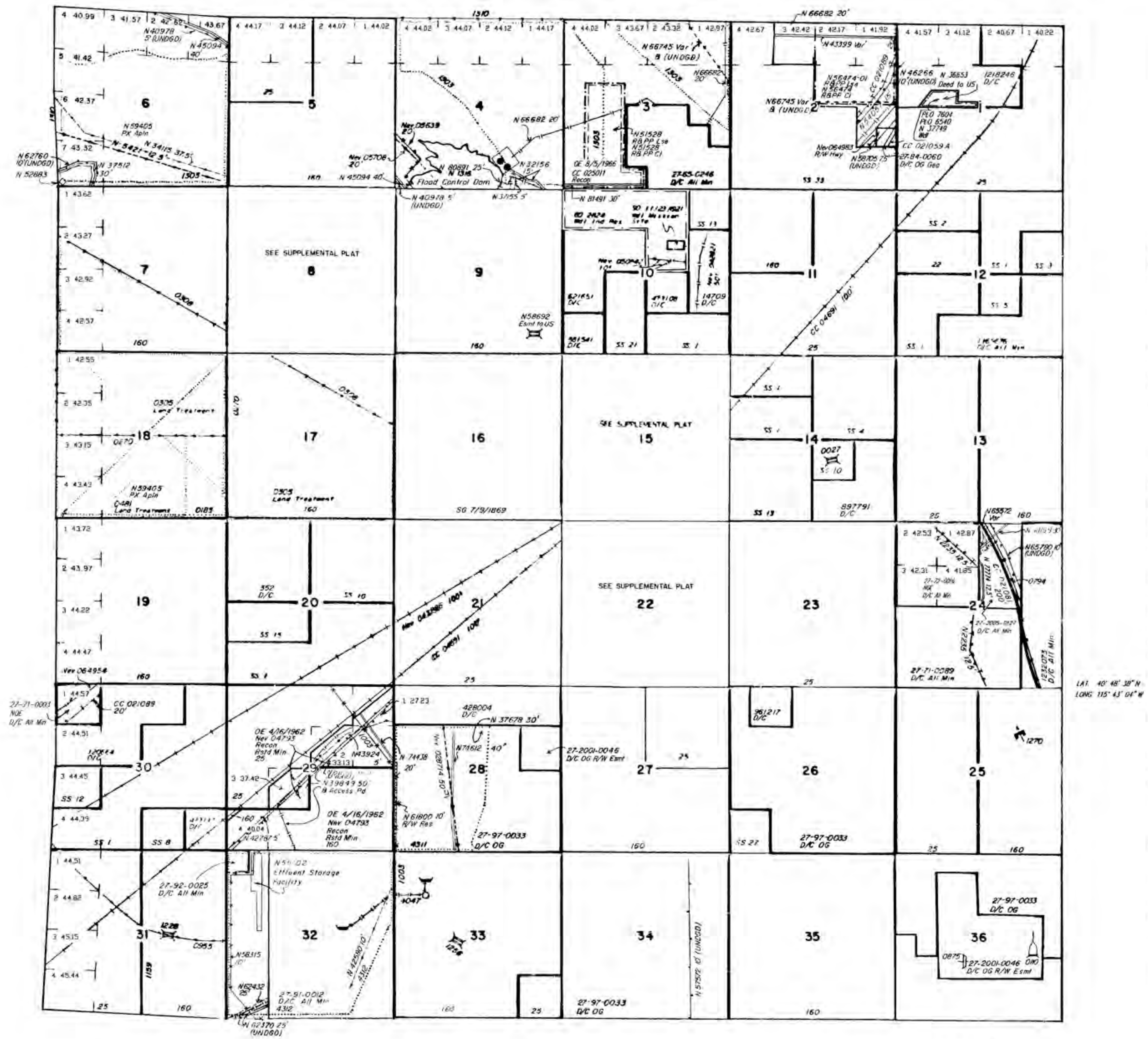
N-010
T. 33 N
R. 55 E

TOWNSHIP 34 NORTH RANGE 55 EAST OF THE MOUNT DIABLO MERIDIAN, NEVADA

ELKO COUNTY
ELKO GR DIST

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MT PLAT



SCALE
10 5 0 10 20 30 60
30 chains to the inch

WARNING STATEMENT
This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been effected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION*

FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

Part Tp in the process of being resurveyed 5/7/1984

N 59230 WD to US Affects:
Sec 1: W/I

CC 04691, Nev 043256 subject to all prior existing rights or claims

Nev 046865 R/W Wa & Sewer line
Sec 10: SW1/4SW1/4, W/I

N 46213 R/W A/'s 10'
Sec29:SE1/4NE1/4NE1/4,SE1/4NE1/4,NE1/4NE1/4SW1/4NE1/4,
SE1/4SW1/4NE1/4,S1/2NE1/4SW1/4NE1/4,NE1/4SW1/4SW1/4NE1/4,
S1/2SW1/4SW1/4NE1/4,NE1/4NE1/4SW1/4,SE1/4NW1/4NE1/4SW1/4,
S1/2NE1/4SW1/4, Lot 4, W/I
Sec32:NW1/4NW1/4,W/I

N 31608 NOL W/I Elko city limits
Sec 9: SE1/4
Secs 10,11: S1/2
Secs 14,15: All
Sec 16: E1/2
Sec 21: NE1/4
Secs 22,23: N1/2

N 46535 R/W A/Rd 40'
Sec 29: NE1/4NE1/4SW1/4, W/I

N 48173 R/W Res Comm S
Sec 2: SE1/4SE1/4SE1/4NE1/4, N1/2NE1/4SE1/4,
SW1/4NE1/4SE1/4, W/I

N 58684 R/W Buried Distribution line
Sec 2: SE1/4SE1/4NE1/4, N1/2NE1/4SE1/4, SW1/4NE1/4SE1/4, W/I

N 58705 R/W Buried Tel Cable
Sec 2: SE1/4SE1/4NE1/4, N1/2NE1/4SE1/4, SW1/4NE1/4SE1/4, W/I

N 59082 PLO 7349 BLM Wdl
Sec 2: S1/2NW1/4NE1/4SE1/4, SW1/4NE1/4SE1/4

Dependent Resurvey Accepted 8/21/1985

CURRENT TO	BY
3/21/07	MS

N 010
T. 34N
R. 55E

APPENDIX B: LIST OF REVIEWED FEDERAL STATUTES

The following federal statutes were reviewed during the preparation of this environmental assessment:

- American Indian Religious Freedom Act 1978 (42 U.S.C. 1996)
- Clean Water Act of 1977 (33 U.S.C. 1251 *et seq*.)
- Clean Air Act as amended (42 U.S.C. 7401 *et seq*.)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended (42 U.S.C. 9615)
- Endangered Species Act of 1973 as amended (16 U.S.C. 1531)
- Executive Order 11988, as amended, Floodplain Management. May 24, 1977.
- Executive Order 11990, Protection of Wetlands. May 24, 1977.
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. February 11, 1994.
- Federal Land Policy and Management Act of 1976. (43 U.S.C. 1701 *et seq*.)
- National Historic Preservation Act as amended (16 U.S.C. 470)
- Public Rangelands Improvement Act of 1978
- Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 *et seq*.)
- Safe Drinking Water Act as amended (42 U.S.C. 300f et seq.)
- Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 *et seq*.)
- Wild and Scenic Rivers Act as amended (16 U.S.C. 1271)
- Wilderness Act of 1964 (16 U.S.C. 1131 *et seq*.)

APPENDIX C: 1999 NEVADA PARTNERS IN FLIGHT PRIORITY MIGRATORY BIRD LIST

Priority Migratory Bird Species which may occur in habitat types on BLM-administered lands according to the 1999 Nevada Partners in Flight Bird Conservation Plan

	Sagebrush	Salt Desert Scrub	Wetlands and Lakes
Black Rosy Finch	X		
Burrowing Owl	X	X	
Short-eared Owl			X
Calliope Hummingbird	X		
Ferruginous Hawk	X		
Gray Flycatcher	X		
Loggerhead Shrike	X	X	
Prairie Falcon	X		
Sage Grouse	X		
Sage Sparrow	X	X	
Sage Thrasher	X	X	
Swainson's Hawk	X		
Vesper Sparrow	X		
White-faced Ibis			X
Snowy Plover			X
American Avocet			X
Black Tern			X
Sandhill Crane			X
Long-billed Curlew			X

APPENDIX D: WILDLIFE WHICH MAY OCCUR IN THE PROJECT AREA – BLM LIST

Appendix D includes lists of wildlife species which may occur within the Project Area. The lists have been compiled from the BLM Nevada Tuscarora District bird, mammal, reptile and amphibian species lists, with an emphasis on lower habitat areas.

Birds

Common Name	Scientific Name
Turkey Vulture	*Cathartes aura*
Bald Eagle	*Haliaetus leucocephalus*
Northern Harrier	*Circus cyaneus*
Swainson's Hawk	*Buteo swainsoni*
Red-tailed Hawk	*Buteo jamaicensis*
Ferruginous Hawk	*Buteo regalis*
Rough-legged Hawk	*Buteo lagopus*
Golden Eagle	*Aquila chrysaetos*
American Kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
Prairie Falcon	*Falco mexicanus*
Cray Partridge	*Perdix perdix*
Chukar	*Alectoris chukar*
Sage Grouse	*Centrocercus urophasianus*
Mourning Dove	*Zenaida macroura*
Great Horned Owl	*Bubo virginianus*
Burrowing Owl	*Athene cunicularia*
Short-eared Owl	*Asio flammeus*
Common Nighthawk	*Chordeiles minor*
Broad-tailed Hummingbird	*Selasphorus platycercus*
Northern Flicker	*Colaptes auratus*
Gray Flycatcher	*Epidonax wrightii*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Say's Phoebe	*Sayornis saya*
Western Kingbird	*Tyrannus verticalis*
Horned lark	*Eremophila alpestris*
Barn Swallow	*Hirundo rustica*
Black-billed Magpie	*Pica pica*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*
Rock Wren	*Salpinctes obsoletus*
Mountain Bluebird	*Sialia currucoides*
American Robin	*Turdus migratorius*
Sage Thrasher	*Oreoscoptes montanus*
Loggerhead Shrike	*Lanius ludovicianus*
Northern Shrike	*Lanius excubitor*
European Starling	*Sturnus vulgaris*
Brewer's Sparrow	*Pooecetes gramineus*
Vesper Sparrow	*Chondestes grammacus*
Lark Sparrow	*Amphispiza belli*
White-crowned Sparrow	*Zonotrichia leucophrys*
Lapland Longspur	*Calcarius lapponicus*

Red-winged Blackbird	*Agelaius phoeniceus*
Western Meadowlark	*Sturnella neglecta*
Brewer's Blackbird	*Euphagus cyanocephalus*
Brown-headed Cowbird	*Molothrus ater*
Black Rosy Finch	*Leucosticte atrata*
Gray-crowned Rosy Finch	*Leucosticte tephrocotis*
House Sparrow	*Passer domesticus*

Mammals

Common Name	Scientific Name
Little Brown Bat	*Myotis lucifugus*
Long-eared Myotis	*Myotis evotis*
Long-legged Myotis	*Myotis volans*
Small-footed Myotis	*Myotis ciliolabrum*
Silver-haired Bat	*Lasionycteris noctivagan*
Western Pipistrelle	*Pipistrellus hesperus*
Big Brown Bat	*Eptesicus fuscus*
Townsend's Big-eared Bat	*Plecotus townsendii*
Brazilian Free-tailed Bat	*Tadarida brasiliensis*
Black-tailed Jackrabbit	*Lepus californicus*
Mountain Cottontail	*Sylvilagus nuttal1ii*
Pygmy Rabbit	*Sylvilagus idahoensis*
Townsend's Ground Squirrel	*Spermophilus townsendii*
Belding Ground Squirrel	*Spermophilus be1dingi*
Least Chipmunk	*Tamias minimus*
Botta's Pocket Gopher	*Thomomys bottae*
Northern Pocket Gopher	*Thomomys talpoides*
Little Pocket Mouse	*Perognathus longimembris*
Great Basin Pocket Mouse	*Perognathus parvus*
Dark Kangaroo Mouse	*Microdipodops megacephalus*
Ord Kangaroo Rat	*Dipodomys ordii*
Chisel-toothed Kangaroo Rat	*Dipodomys microps*
Deer Mouse	*Peromyscus maniculatus*
Northern Grasshopper Mouse	*Onychomys leucogaster*
Desert Woodrat	*Neotoma lepida*
Sagebrush Vole	*Lemmiscus curtatus*
House Mouse	*Mus musculus*
Kit Fox	*Vulpes macrotis*
Coyote	*Canis latrans*
Long-tailed Weasel	*Mustela frenata*
Badger	*Taxidea taxus*
Striped Skunk	*Mephitis mephitis*
Mountain Lion	*Felix concolor*
Bobcat	*Lynx rufus*
Mule Deer	*Odocoileus hemionus*
Pronghorn	*Antilocapra americana*

Reptiles

Common Name	Scientific Name
Western Skink	*Eumeces skiltonianus*
Western Whiptail	*Cnemidophorus tigrus*
Desert Collared Lizard	*Crotaphytus insularis*
Long-nosed Leopard Lizard	*Gambelia wislizenii*
Desert Spiny Lizard	*Sceloporus magister*
Sagebrush Lizard	*Sceloporus graciosus*
Western Fence Lizard	*Sceloporus cccidentalis*
Side-blotched Lizard	*Uta stansburiana*
Desert Horned Lizard	*Phrynosorna platyrhinos*
Short-horned Lizard	*Phrynosorna douglassii*
Long-nosed Snake	*Rhinocheilus lecontei*
Ground Snake	*Sonora semiannulata*
Night Snake	*Hypsiglena torquata*
Gopher Snake	*Pituophis melanoleucus*
Racer	*Coluber constrictor*
Striped Whipsnake	*Masticophis taeniatus*
Western Rattlesnake	*Crotalus viridi*

APPENDIX E: WILDLIFE WHICH MAY OCCUR IN THE PROJECT AREA – NDOW LIST

Appendix E includes lists of wildlife species which may occur within the Project Area. The lists were compiled by NDOW with an emphasis on Pinion-Juniper, Sagebrush Steppe and Salt Desert Scrub habitats.

Wildlife Species List
Northeast Nevada – Units 065
Habitat Types (P-J, Sagebrush Steppe, Salt Desert Scrub)

Birds

Common Name	Scientific Name
Order: *Ciconiiformes* (Long-leg Waders and Vultures)	
Family: *Cathartidae* (New World Vultures)	
Turkey Vulture	*Cathartes aura*
California Condor	*Gymnogyps californianus(L.E.)*
Order: *Falconiformes* (Diurnal Flesh Eaters)	
Family: *Accipitridae* (Hawks, Eagles, Osprey)	
Bald Eagle	*Haliaetus leucocephalus*
Northern Harrier	*Circus cyaneus*
Sharp-shinned Hawk	*Accipiter striatus*
Cooper's Hawk	*Accipiter cooperii*
Northern Goshawk	*Accipiter gentilis*
Red-shouldered Hawk	*Buteo lineatus*
Broad-winged Hawk	*Buteo platypterus*
Swainson's Hawk	*Buteo swainsoni*
Red-tailed Hawk	*Buteo jamaicensis*
Ferruginous Hawk	*Buteo regalis*
Rough-legged Hawk	*Buteo lagopus*
Golden Eagle	*Aquila chrysaetos*
Family: *Falconidae* (Falcons)	
American Kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
Prairie Falcon	*Falco mexicanus*
Order: *Galliformes* (Chicken Relatives)	
Family: *Phasianidae* (Grouse, Partridge)	
Chukar	*Alectoris chukar*
Gray Partridge	*Perdix perdix*
Greater Sage-Grouse	*Centrocercus urophasianus*
Family: *Odontophoridae* (New World Quail)	
Mountain Quail	*Oreortyx pictus (L.E.)*
Order: *Columbiformes* (Pigeons and Allies)	
Family: *Columbidae* (Doves)	
Rock Dove	*Columba livia*
White-winged Dove	*Zenaida asiatica*
Mourning Dove	*Zenaida macroura*

Eurasian Collared-Dove	*Streptopelia decaocto*
Ringed Turtle-Dove	*Streptopelia risoria*

Order: *Strigiformes* (Nocturnal Flesh Eaters)
Family: *Tytonidae* (Barn Owls)

Barn Owl	*Tyto alba*

Family: *Strigidae* (Owls)

Western Screech-Owl	*Otus kennicottii*
Great Horned Owl	*Bubo virginianus*
Northern Pygmy-Owl	*Glaucidium gnoma*
Burrowing Owl	*Athene cunicularia*
Long-eared Owl	*Asio otus*
Short-eared Owl	*Asio flammeus*
Northern Saw-whet Owl	*Aegolius acadicus*

Order: *Caprimulgiformes* (Night Jars)
Family: *Caprimulgidae* (Goatsuckers)

Common Nighthawk	*Chordeiles minor*
Common Poorwill	*Phalaenoptilus nuttallii*

Order: *Apodiformes* (Small Fast Fliers)
Family: *Apodidae* (Swifts)

White-throated Swift	*Aeronautes saxatalis*

Family: *Trochilidae* (Hummingbirds)

Black-chinned Hummingbird	*Archilochus alexandri*
Broad-tailed Hummingbird	*Selasphorus platycercus*

Order: *Piciformes* (Cavity Builders)
Family: *Picidae* (Woodpeckers)

Red-naped Sapsucker	*Sphyrapicus nuchalis*
Downy Woodpecker	*Picoides pubescens*
Hairy Woodpecker	*Picoides villosus*
Northern Flicker	*Colaptes auratus*

Order: *Passeriformes* (Perching Birds)
Family: *Tyrannidae* (Flycatchers)

Western Wood-Pewee	*Contopus sordidulus*
Gray Flycatcher	*Epidonax wrightii*
Say's Phoebe	*Sayornis saya*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Western Kingbird	*Tyrannus verticalis*

Family: *Laniidae* (Shrikes)

Loggerhead Shrike	*Lanius ludovicianus*
Northern Shrike	*Lanius excubitor*

Family: *Corvidae* (Jays)

Western Scrub-Jay	*Aphelocoma californica*
Pinyon Jay	*Gymnorhinus cyanocephalus*
Clark's Nutcracker	*Nucifraga columbiana*
Black-billed Magpie	*Pica pica*

American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*

Family: *Alaudidae* (Larks)

Horned Lark	*Eremophila alpestris*

Family: *Hirundinidae* (Swallows)

Tree Swallow	*Tachycineta bicolor*
Violet-green Swallow	*Tachycineta thalassina*
N. Rough-winged Swallow	*Stelgidopteryx serripennis*
Cliff Swallow	*Petrochelidon pyrrhonota*
Barn Swallow	*Hirundo rustica*

Family: *Paridae* (Chickadees, Titmice)

Mountain Chickadee	*Poecile gambeli*
Juniper Titmouse	*Baeolophus griseus*

Family: *Aegithalidae* (Bushtits)

Bushtit	*Psaltriparus minimus*

Family: *Troglodytidae* (Wrens)

Rock Wren	*Salpinctes obsoletus*
Canyon Wren	*Catherpes mexicanus*

Family: *Regulidae* (Kinglets)

Golden-crowned Kinglet	*Regulus satrapa*
Ruby-crowned Kinglet	*Redulus calendula*

Family: *Sylviidae* (Gnatcatchers)

Blue-gray Gnatcatcher	*Polioptila caerulea*

Family: *Turdidae* (Thrushes)

Mountain Bluebird	*Sialia currucoides*
Townsend's Solitaire	*Myadestes townsendi*
American Robin	*Turdus migratorius*

Family: *Mimidae* (Thrashers, Mockingbirds)

Northern Mockingbird	*Mimus polyglottos*
Sage Thrasher	*Oreoscoptes montanus*

Family: *Sturnidae* (Starlings)

European Starling	*Sturnus vulgaris*

Family: *Motacillidae* (Pipits)

American Pipit	*Anthus rubescens*

Family: *Bombycillidae* (Waxwings)

Bohemian Waxwing	*Bombycilla garrulus*
Cedar Waxwing	*Bombycilla cedrorum*

Family: *Parulidae* (Wood Warblers)

Virginia's Warbler	*Vermivora virginae*
Black-throated Gray Warbler	*Dendroica nigrescens*

Family: *Thraupidae* (Tanagers)

Western Tanager	*Piranga ludoviciana*

Family: *Emberizidae* (Sparrows, Towhees, Juncos)

Green-tailed Towhee	*Pipilo chlorurus*
Spotted Towhee	*Pipilo maculatus*
Brewer's Sparrow	*Spizella breweri*
Vesper Sparrow	*Pooecetes gramineus*
Lark Sparrow	*Chondestes grammacus*

Black-throated Sparrow	*Amphispiza bileneata*
Sage Sparrow	*Amphispiza belli*
Gambel'sWhite-crownedSparrow	*Zonotrichia leucophrys gambelii*
Mountain W-crowned Sparrow	*Zonotrichia leucophrys oriantha*
Dark-eyed Junco*(Oregon)*	*Junco hyemalis therburi*
Dark-eyed Junco(*Gray-headed*)	*Junco hyemalis caniceps*
Lapland Longspur	*Calcarius lapponicus*
Family: *Cardinalidae* (Grosbeaks, Buntings)	
Black-headed Grosbeak	*Pheucticus melanocephalus*
Lazuli Bunting	*Passerina amoena*
Family: *Icteridae* (Blackbirds, Orioles)	
Brewer's Blackbird	*Euphagus cyanocephalus*
Brown-headed Cowbird	*Molothrus ater*
Scott's Oriole	*Icterus parisorum*
Family: *Fringillidae* (Finches, Grosbeaks)	
Gray-crowned Rosy-Finch	*Leucosticte tephrocotis*
Black Rosy-Finch	*Leucosticte atrata*
Cassin's Finch	*Carpodacus cassinii*
House Finch	*Carpodacus mexicanus*
Pine Siskin	*Carduelis pinus*
Lesser Goldfinch	*Carduelis psaltria*
American Goldfinch	*Carduelis tristis*
Evening Grosbeak	*Coccothraustes vespertinus*
Family: *Passeridae* (Old World Sparrows)	
House Sparrow	*Passer domesticus*

Mammals

Common Name	**Scientific Name**
Order: *Insectivora* (Insect Eaters)	
Family: *Soricidae* (Shrews)	
Merriam's Shrew	*Sorex meriammi*
Order: *Chiroptera* (Bats)	
Family: *Vespertilionidae* (Plainnose Bats)	
California Myotis	*Myotis californicus*
Western Small-footed Myotis	*Myotis ciliolabrum*
Long-eared Myotis	*Myotis evotis*
Long-legged Myotis	*Myotis volans*
Hoary Bat	*Lasiurus cinereus*
Silver-haired Bat	*Lasionycteris noctivagans*
Western Pipistrelle	*Pipistrellus hesperus*
Big Brown Bat	*Eptesicus fuscus*
Townsend's Big-eared Bat	*Corynorhinus townsendii*
Pallid Bat	*Antrozous pallidus*
Family: *Molossidae* (Freetail Bats)	
Brazilian Free-tailed Bat	*Tadarida brasiliensis*

Order: *Lagomorpha* (Pikas, Hares, Rabbits)
Family: *Leporidae* (Hares, Rabbits)

Black-tailed Jackrabbit	*Lepus californicus*
Mountain Cottontail	*Sylvilagus nuttalli*
Desert Cottontail	*Sylvilagus audubonii*
Pygmy Rabbit	*Brachylagus idahoensis*

Order: *Rodentia* (Rodents)
Family: *Sciuridae* (Squirrels)

Least Chipmunk	*Tamias minimus*
Cliff Chipmunk	*Tamias dorsalis*
Yellow-bellied Marmot	*Marmota flaviventris*
White-tailed Antelope Squirrel	*Ammospermophilus leucurus*
Great Basin Ground Squirrel	*Spermophilus mollis*
Belding's Ground Squirrel	*Spermophilus beldingi*
Wyoming Ground Squirrel	*Spermophilus elegans*

Family: *Geomyidae* (Gophers)

Botta's Pocket Gopher	*Thomomys bottae*
Northern Pocket Gopher	*Thomomys talpoides*
Townsend's Pocket Gopher	*Thomomys townsendii*

Family: *Heteromyidae* (Kangaroo Rodents)

Little Pocket Mouse	*Perognathus longimembris*
Great Basin Pocket Mouse	*Perognathus parvus*
Dark Kangaroo Mouse	*Microdipodops megacephalus*

Family: *Heteromyidae* (Kangaroos cont.)

Ord Kangaroo Rat	*Dipodomys ordii*
Chisel-toothed Kangaroo Rat	*Dipodomys microps*

Family: *Cricetidae* (Mice, Rats, Voles)

Western Harvest Mouse	*Reithrodontomys megalotis*
Canyon Mouse	*Peromyscus crinitus*
Deer Mouse	*Peromyscus maniculatus*
Northern Grasshopper Mouse	*Onychomys leucogaster*
Desert Woodrat	*Neotoma lepida*
Sagebrush Vole	*Lemmiscus curtatus*

Family: *Erethizontidae* (New World Porcupines)

North American Porcupine	*Erethizon dorsatum*

Order: *Carnivora* (Flesh-Eaters)
Family: *Canidae* (Dogs)

Coyote	*Canis latrans*
Gray Wolf	*Canis lupus (L.E.)*
Kit Fox	*Vulpes velox*
Red Fox	*Vulpes vulva*

Family: *Procyonidae* (Racoons and Allies)

Ringtail	*Bassariscus astutus*
Common Raccoon	*Procyon lotor*

Family: *Mustelidae* (Weasels and Allies)

Short-tailed Weasel	*Mustela erminae*

Long-tailed Weasel	*Mustela frenata*
American Badger	*Taxidea taxus*
Striped Skunk	*Mephitis mephitis*
Western Spotted Skunk	*Spilogale gracilis*
Family: *Felidae* (Cats)	
Mountain Lion	*Felix concolor*
Bobcat	*Lynx rufus*

Order: *Artiodactyla* (Hoofed Mammals)

Family: *Cervidae* (Deer)	
Rocky Mountain Elk	*Cervus canadensis*
Mule Deer	*Odocoileus hemionus*
Family: *Antilocapridae* (Pronghorn)	
Pronghorn	*Antilocapra americana*

Reptiles

Common Name	**Scientific Name**

Order: *Squamata* (Lizards, Snakes)

Family: *Iguanidae* (Iguanas and Allies)	
Common Zebra-tailed Lizard	*Callisaurus draconoides*
Long-nosed Leopard Lizard	*Gambelia wislizenii*
Great Basin Collared Lizard	*Crotaphytus bicinctores*
Desert Spiny Lizard	*Sceloporus magister*
Western Fence Lizard	*Sceloporus occidentalis*
Sagebrush Lizard	*Sceloporus graciosus*
Side-blotched Lizard	*Uta stansburiana*
Greater Short-horned Lizard	*Phrynosoma hernadesi*
Desert Horned Lizard	*Phrynosoma platyrhinos*
Family: *Scincidae* (Skinks)	
Great Basin Skink	*Eumeces skiltonianus utahensis*
Family: *Teiidae* (Whiptails)	
Western Whiptail	*Cnemidophorus tigrus*

Family: *Colubridae* (Solid-toothed Snakes)	
Ringneck Snake	*Diadophis punctatus*
Striped Whipsnake	*Masticophis taeniatus*
Great Basin Gopher Snake	*Pituophis cantenifer deserticola*
Long-nosed Snake	*Rhinocheilus lecontei*
Sonoran Mountain Kingsnake	*Lampropeltis pyromelana*
Western Terrestrial Garter	*Thamnophis elegans*
Ground Snake	*Sonora semiannulata*
Night Snake	*Hypsiglena torquata*

Family: *Viperidae* (Vipers)	
Great Basin Rattlesnake	*Crotalus viridis lutosus*

Amphibians

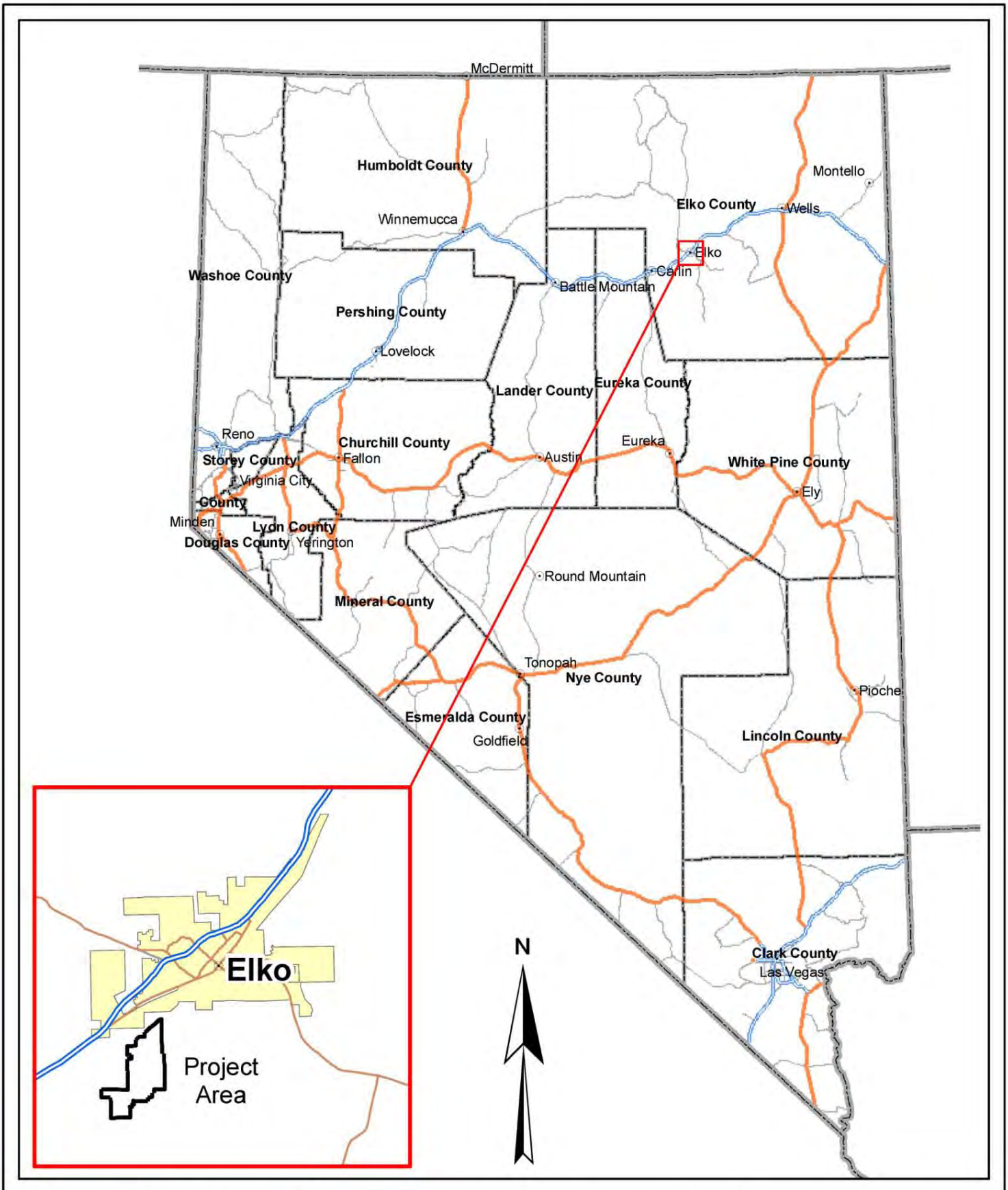
Common Name	Scientific Name
Order: *Anura* (Frogs and Toads)	
Family: *Pelobatidae* (Spadefoots)	
Great Basin Spadefoot Toad	*Spea intermontana*
Family: *Hylidae* (Treefrogs)	
Pacific Chorus Frog	*Pseudacris regilla*

L.E. = Locally Extirpated

Note: This list is a combination of wildlife sight record data and our best effort to predict what wildlife species live in this area in all seasons and under optimum habitat conditions.

*With the exception of the European Starling, House Sparrow, Eurasian Collared-Dove, Ringed Turtle-Dove and Rock Dove, all birds are protected in Nevada by either the International Migratory Bird Treaty Act, Endangered Species Act or as game species. Several mammal, reptile and amphibian species are also protected as either game, sensitive, threatened or priority species. For further information on a species status, visit our web site at *NDOW.ORG.*

Updated: 3/2009 - Peter V. Bradley - Nevada Department of Wildlife - Elko, Nevada



SRK Consulting Engineers and Scientists			
DESIGN: CS	DRAWN: BVB	REVIEWED: CS	
CHECKED: CS	APPROVED: CS	DATE: 02/10/2009	
FILE NAME: Fig01_Location_Map.mxd			

CITY OF ELKO WATER RECLAMATION FACILITY REUSE SITE R&PP

DRAWING TITLE: **LOCATION MAP**

DRAWING NO. FIGURE 1	SHEET 1 OF 1	REVISION NO. A
SRK JOB NO. 108026-1000		

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig01_Location_Map_BVB_20090210.mxd

EXPLANATION

Reuse Site Wells

- Existing Monitoring
- Proposed Monitoring
- Proposed Water Well

Other Features

- Proposed Infiltration Gallery
- Proposed Reuse Pipeline
- Reuse Pipeline
- Existing Overhead Powerline
- Proposed RIBs
- Proposed Effluent Storage Reservoir
- Existing RIBs
- Existing Effluent Storage Reservoir
- Project Area Boundary
- R&PP Parcel
- City of Elko Property within Project Area
- Public Land Administered by BLM

Access Road and Utility Cooridor

Proposed Fecal Coliform Sampling Station

Radio-controlled Airplane Landing Srtip

Bullion Road

Dam 5C

Dam 5A

Distribution Pond

Pump Station

Bruce Miller Ranch Hay Fields

34N 55E

33N 55E

29

28

31

32

33

4

6

A

B

C

D

E

1A

1B

2A

2B

3A

3B

4A

4B

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

N

0 1,000 2,000 Feet

1 inch = 1,000 feet

SRK Consulting
Engineers and Scientists

DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig02_Project_Area.mxd				

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

DRAWING TITLE: **PROJECT AREA**

DRAWING NO.	FIGURE 2	SHEET 1 OF 1	REVISION NO. A
SRK JOB NO.	108026-1000		

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig02_Project_Area_BVB_20090210.mxd

Ruby View Golf Course

Elko County Fairgrounds

Elko Municipal Airport

Main Sewer Pipelines from City

Water Reclamation Facility (WRF)

Bruce Miller Ranch Hay Fields

RIBs

Land Application Pivots

Effluent Storage Reservoirs

N

EXPLANATION

- Reuse Hydrant
- Reuse Valve
- Reuse Stub
- Sewer Pipeline
- Reuse Pipeline
- Existing RIBs
- Existing Effluent Storage Reservoir
- Project Area Boundary
- R&PP Parcel
- City of Elko Property within Project Area
- Public Land Administered by BLM
- Elko City Limits

Feet

0 2,500 5,000

1 inch = 2,500 feet

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Engineers and Scientists

DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig03_Water_Reuse_Facilities.mxd				

CITY OF ELKO
WATER RECLAMATION FACILITY REUSE SITE R&PP

DRAWING TITLE:
WATER RECLAMATION FACILITY SERVICE AND REUSE AREAS

DRAWING NO.	SHEET	REVISION NO.
FIGURE 3	1 OF 1	A

SRK JOB NO. 108026-1000

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig03_Water_Reuse_Facilities_BVB_20090210.mxd

19
20
21
28
29
30
31
32
34N 55E
33N 55E
A
B
C
D
E
L1
L3
L4
L8
68353
85026
42835
68352
107024
24957
43623
68350
48440
107027
85027
70925
007-2
007-3
007-1
521
Dam 5C
5C Pumpback Pond
Dam 5A
Pond
Distribution Pond
Diversion Swale

EXPLANATION

Reuse Site Wells
- Existing Monitoring
- Proposed Monitoring
- Proposed Drinking Water

Other Wells
- Monitoring
- Public Supply
- Down Gradient Drinking Water
- Drinking Water

FEMA Flood Zones
- Zone A
- Zone A3
- Zone A5
- Zone A (estimate)

Other Features
- Infiltration Gallery
- Wetland
- Proposed RIBs
- Proposed Effluent Storage Reservoir
- Existing RIBs
- Existing Effluent Storage Reservoir
- Project Area Boundary
- R&PP Parcels
- City of Elko Property within the Project Area
- Public Land Administered by BLM

N

0 1,500 3,000 Feet

1 inch = 1,500 feet

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Engineers and Scientists

DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig04_Water_Resources.mxd				

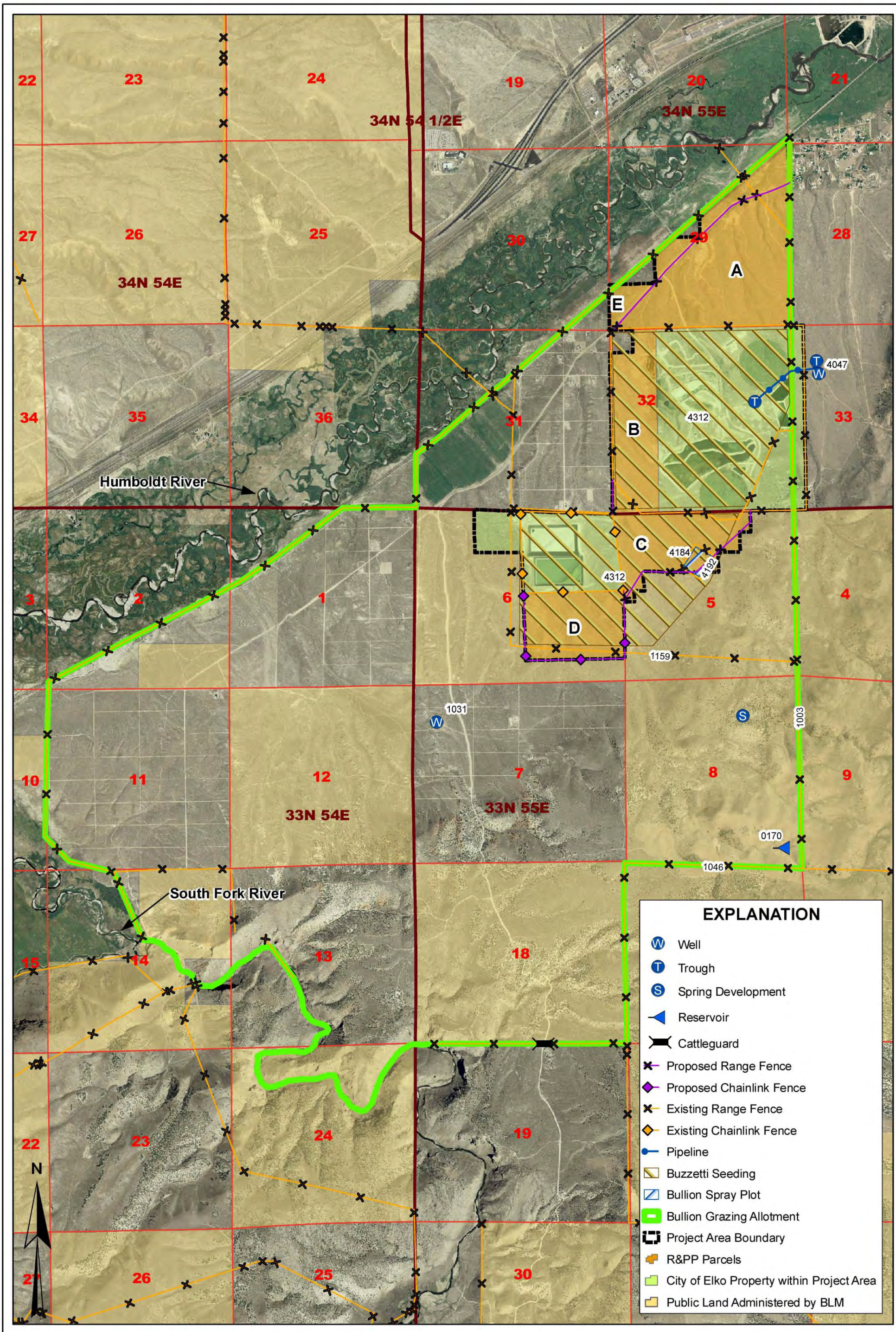
CITY OF ELKO
WATER RECLAMATION FACILITY REUSE SITE R&PP

DRAWING TITLE: **WATER RESOURCES**

DRAWING NO. **FIGURE 4** | SHEET 1 OF 1 | REVISION NO. **A**

SRK JOB NO. **108026-1000**

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig04_Water_Resources_BVB_20090210.mxd



0 2,500 5,000 Feet

1 inch = 2,500 feet

SRK Consulting
Engineers and Scientists

DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig05_Fences_and_Grazing.mxd				

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

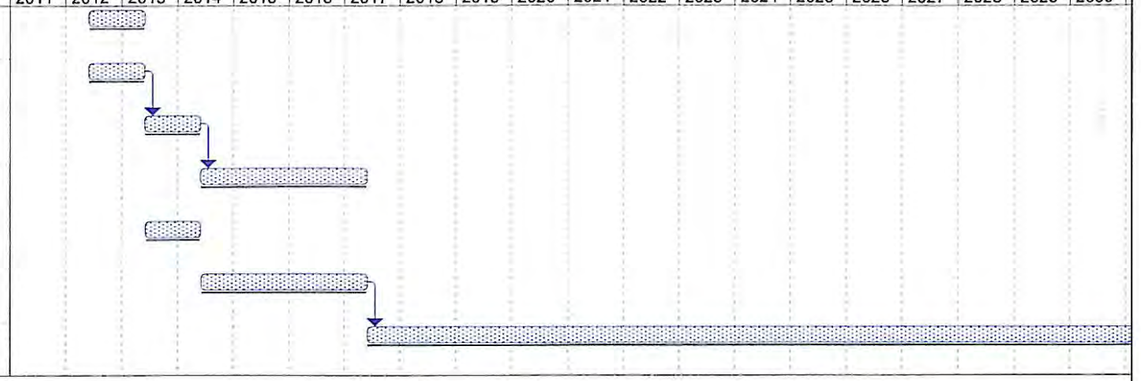
DRAWING TITLE:
FENCES AND GRAZING

DRAWING NO.	SHEET	REVISION NO.
FIGURE 5	1 OF 1	A
SRK JOB NO. 108026-1000		

Path: G:\Sites\Elko\City of Elko\R&PP Application\Fig05_Fences_and_Grazing_BVB_20090210.mxd

FIGURE 6: PROJECT SCHEDULE

ID	Task Name
1	Develop long term conceptual development plan
2	Develop engineering plan for access roads and pipeline corridor in Parcel A and north center pivot RIBs
3	Install access road, pipeline corridor, and first phase of north pivot RIBs
4	Install second phase of the north pivot RIBs
5	Install new monitor wells and fecal coliform sampling station of Parcel A
6	Develop preliminary engineering plan for new effluent reservoirs on Parcel D and associated pipeline
7	Development and instalation of effluent reservoirs, remaining RIBs and associated infrastructure



[redacted]

#3
#2
Block Group #1
Census Tract #9512
20
21
1130
1131
1129
1125
28
29
34N 55E
1132
1123
1166
1135
1139
1138
1137
1140
1142
1143
1144
1146
1145
1147
1148
1149
1136
1122
1151
1150
1155
1121
33
31
32
1152
1153
1154
1120
1141
1157
1156
1158
1159
1161
1160
1119
6
5
33N 55E
N

EXPLANATION

- Proposed RIBs
- Proposed Effluent Storage Reservoir
- Existing RIBs
- Existing Effluent Storage Reservoir
- Block
- Block Group
- Project Area Boundary
- Public Land Administered by BLM

0 1,000 2,000 Feet

1 inch = 1,000 feet

SRK Consulting
Engineers and Scientists

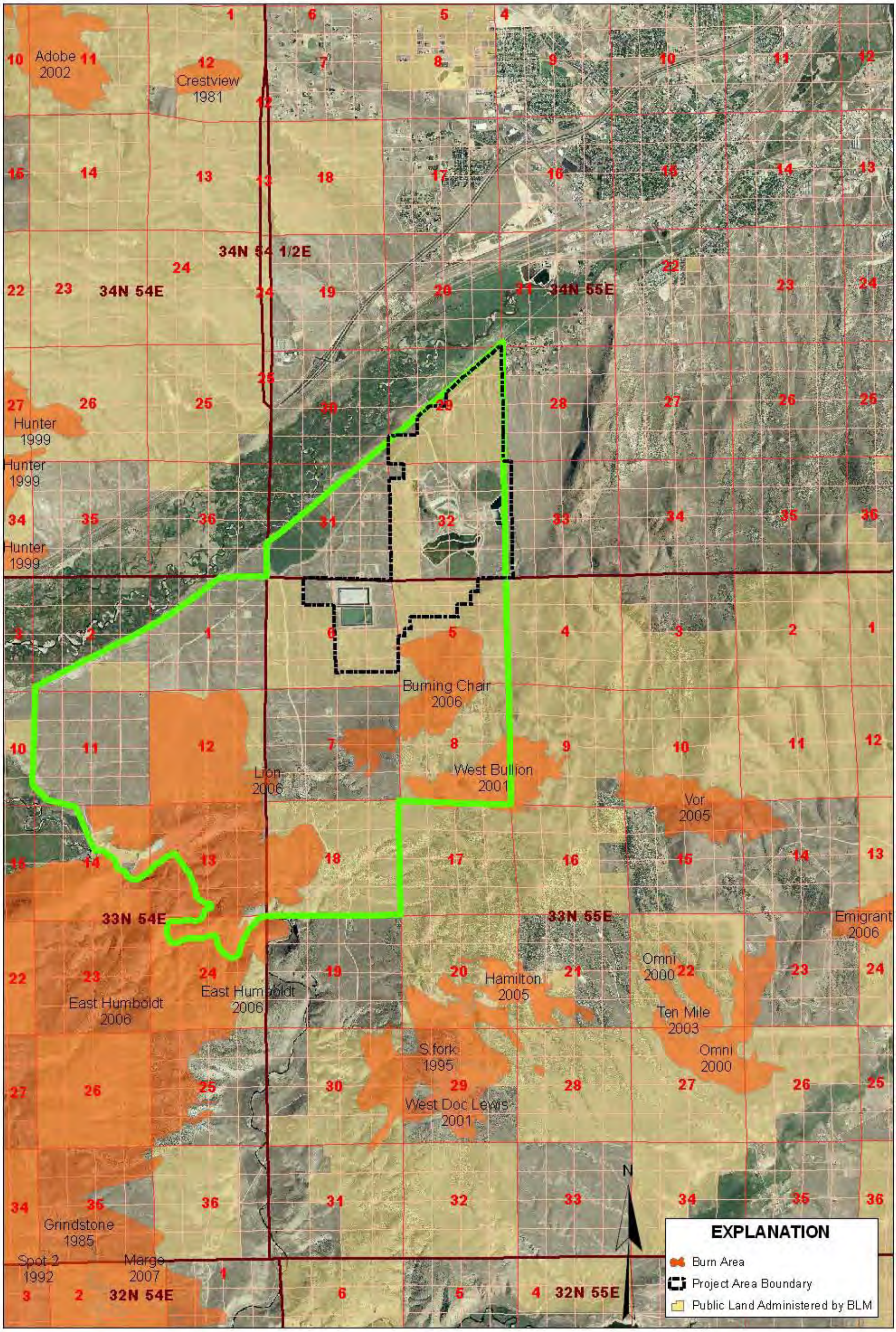
DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig07_Environmental_Justice.mxd				

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

DRAWING TITLE: ENVIRONMENTAL JUSTICE

DRAWING NO.	FIGURE 7	SHEET 1 OF 1	REVISION NO. A
SRK JOB NO.	108026-1000		

Path: G:\Sitee\Elko\City of Elko\RPP Application\Fig07_Environmental_Justice_BVB_20090210.mxd



0 4,000 8,000 Feet

1 inch = 4,000 feet

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DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig08_Fire_Map.mxd				

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

DRAWING TITLE: **FIRE**

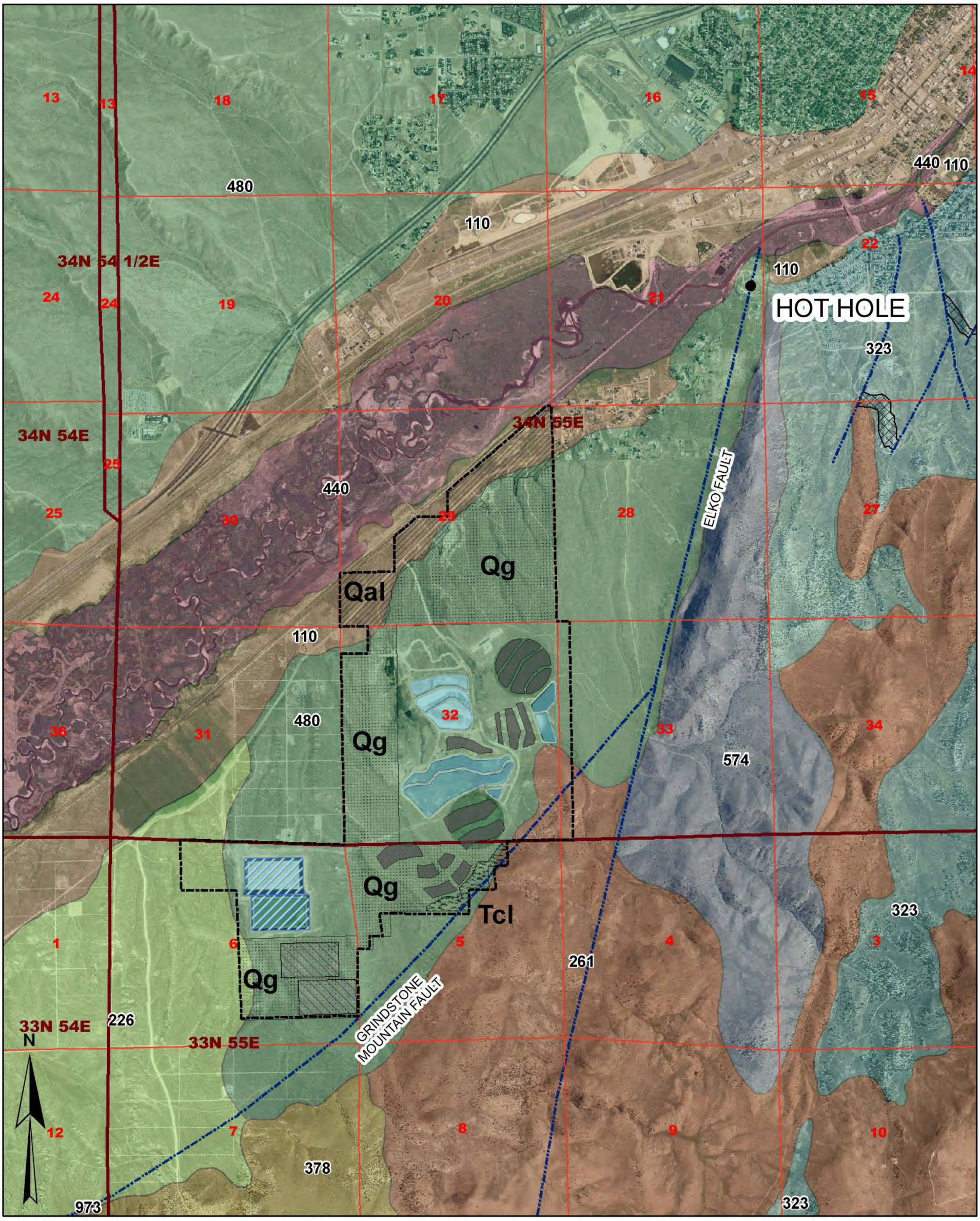
DRAWING NO.	FIGURE 8	SHEET 1 OF 1	REVISION NO. A
SRK JOB NO.	108026-1000		

Soil Classification

- 110 : Moranch-Ocala-Orovada association
- 226 : Enko-Rad association
- 261 : Linkup-Roca-Vanwyper association
- 323 : Grina-Kelk-Orovada association
- 378 : Chiara-Spilock-Kelk association
- 440 : Devilsgait-Woofus-Devilsgait, gravelly substratum association
- 480 : Hunnton-Wieland-Gance association
- 574 : Sumine-Cleavage-Cleavage, very cobbly association

Other Features

- Proposed RIBs
- Proposed Effluent Storage Reservoir
- Existing RIBs
- Existing Effluent Storage Reservoir
- Project Area Boundary
- Faults
- Tcl - Cherty Limestone
- Qal - Humboldt River Flood Plain Alluvium
- Qg - Older Alluvium
- Teos - Oil Shale Member



0 2,000 4,000 Feet

1 inch = 2,333.333333 feet

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DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	09/29/2009
FILE NAME:	Fig09_Soil_Map.mxd				

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

DRAWING TITLE:
SOILS & GEOLOGY

DRAWING NO.	SHEET	REVISION NO.
FIGURE 9	1 OF 1	A
SRK JOB NO. 108026-1000		

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig09_Soil_Map_BVB_20090210.mxd

EXPLANATION

- Sage Grouse, Summer
- Sage Grouse, Winter
- Sage Grouse, Nesting
- Project Area Boundary
- Public Land Administered by BLM

54E
36N 55E
36N 56E
35N 53E
35N 54E
35N 55E
35N 56E
City of Elko
34N 53E
34N 54E
34N 54 1/2E
34N 55E
34N 56E
33N 53E
33N 54E
33N 55E
33N 56E
South Fork Reservoir
32N 53E
32N 54E
32N 55E
32N 56E
31N 53E
31N 54E
31N 55E
31N 56E
N

0 10,000 20,000 Feet

1 inch = 10,000 feet

SRK Consulting
Engineers and Scientists

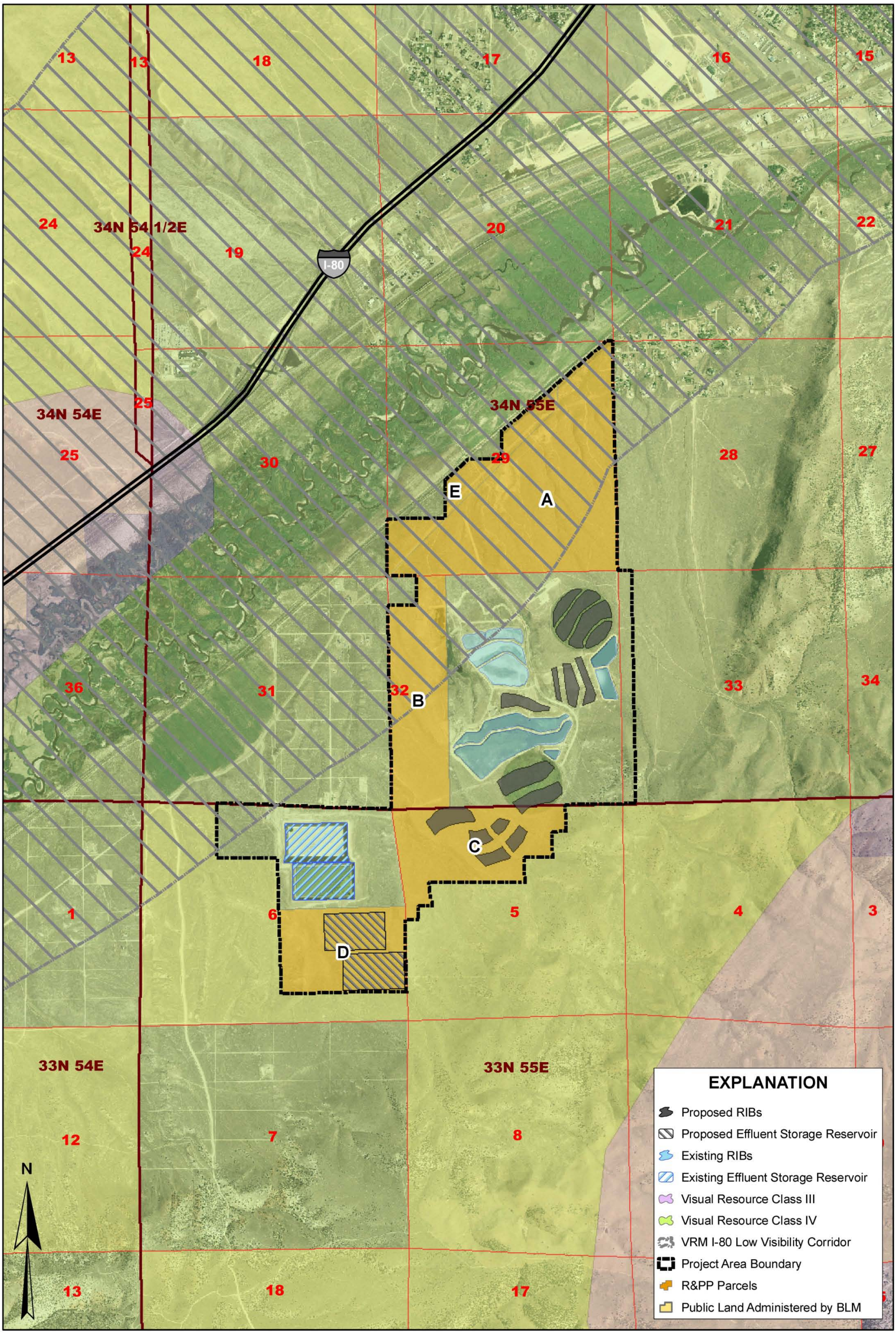
DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig10_Wildlife_Birds_Map.mxd				

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

DRAWING TITLE:
WILDLIFE - BIRDS

DRAWING NO. FIGURE 10	SHEET 1 OF 1	REVISION NO. A
SRK JOB NO. 108026-1000		

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig10_Wildlife_Birds_Map_BVB_20090210.mxd



0 2,000 4,000 Feet

1 inch = 2,000 feet

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DESIGN:	CS	DRAWN:	BVB	REVIEWED:	CS
CHECKED:	CS	APPROVED:	CS	DATE:	02/10/2009
FILE NAME:	Fig11_Visual_Resources.mxd				

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

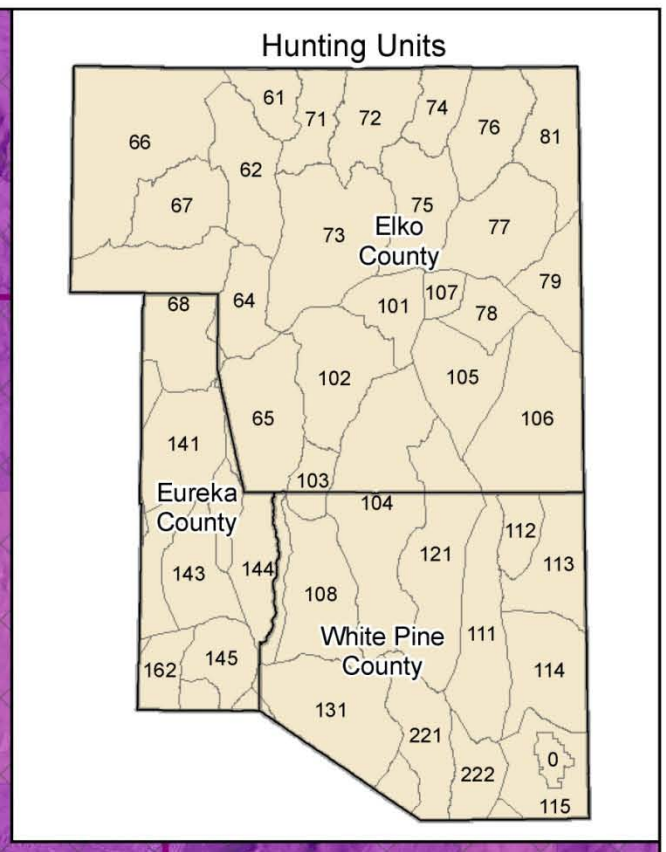
DRAWING TITLE:
VISUAL RESOURCES

DRAWING NO.	FIGURE 11	SHEET 1 OF 1	REVISION NO. A
SRK JOB NO.	108026-1000		

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig11_Visual_Resources_BVB_20090210.mxd

EXPLANATION

- Pronghorn Antelope, Year Round
- Mule Deer, Summer
- Mule Deer, Winter
- Mule Deer, Limited
- Project Area Boundary
- Public Land Administered by BLM



54E | 36N 55E

35N 53E | 35N 54E | 35N 55E

City of Elko

34N 53E | 34N 54E | 34N 54 1/2E | 34N 55E | 34N 56E

33N 53E | 33N 54E | 33N 55E | 33N 56E

South Fork Reservoir

32N 53E | 32N 54E | 32N 55E | 32N 56E

31N 53E | 31N 54E | 31N 55E | 31N 56E

N

0 10,000 20,000 Feet

1 inch = 10,000 feet

SRK Consulting
Engineers and Scientists

DESIGN: CS	DRAWN: BVB	REVIEWED: CS
CHECKED: CS	APPROVED: CS	DATE: 02/10/2009
FILE NAME: Fig12_Wildlife_Mammals_Map.mxd		

CITY OF ELKO
WATER RECLAMATION
FACILITY REUSE SITE R&PP

DRAWING TITLE:
WILDLIFE - MAMMALS

DRAWING NO.	SHEET	REVISION NO.
FIGURE 12	1 OF 1	A
SRK JOB NO. 108026-1000		

Path: G:\Sites\Elko\City of Elko\RPP Application\Fig12_Wildlife_Mammals_Map_BVB_20090210.mxd